1957

Gas Journal

VOL. 283 109th YEAR LONDON, OCTOBER 9, 1957 No. 4917 PRICE 1/6

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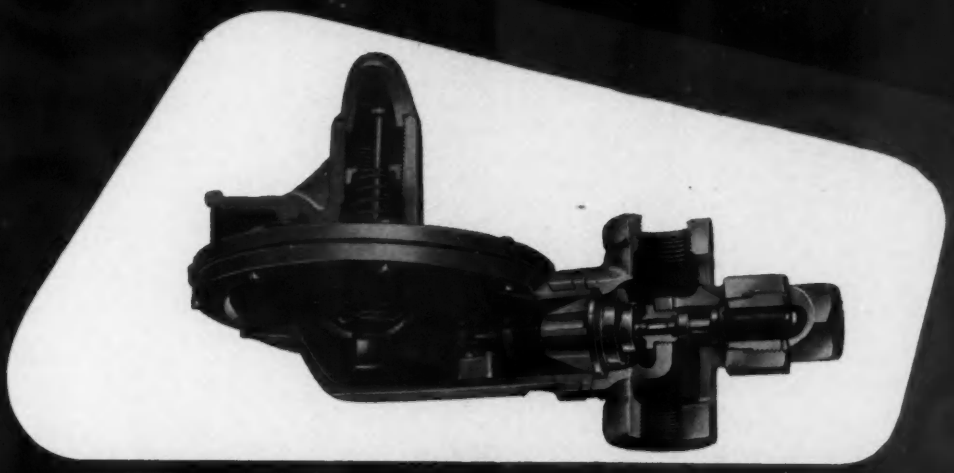

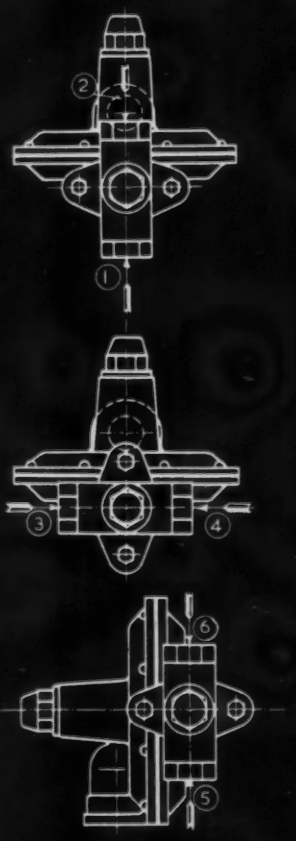

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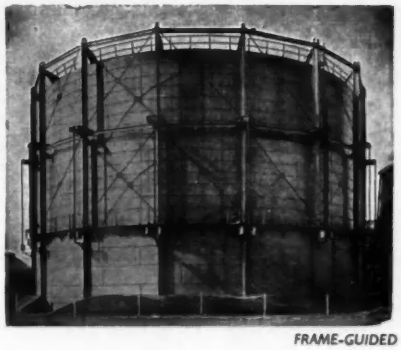

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The above illustrations show but a few of the very many spirally-guided gasholders and waterless gasholders built by us.

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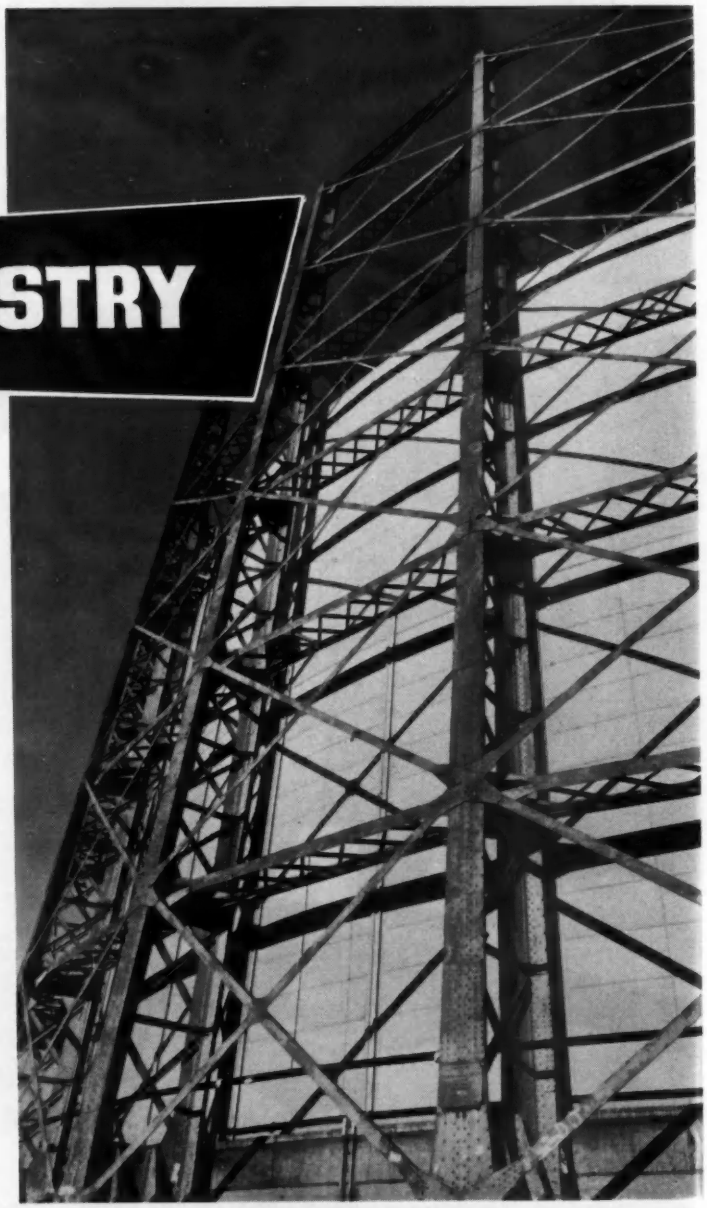

For many years, British Paints Limited have maintained a Technical Division solely to study and meet the varied painting requirements of the Gas Industry.

As a result, British Paints Limited are expert in this field, supplying paints, enamels and protective finishes scientifically formulated to satisfy particular purposes—whether for the protection of structural steelwork and gas holders, the decoration of premises, or the stove-enamelling of domestic gas appliances.

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Gas Holder, St. Anthony's, Newcastle upon Tyne. Painted with British Paints Limited "Superlative" Alkyd Enamel. Photo by courtesy of The Northern Gas Board

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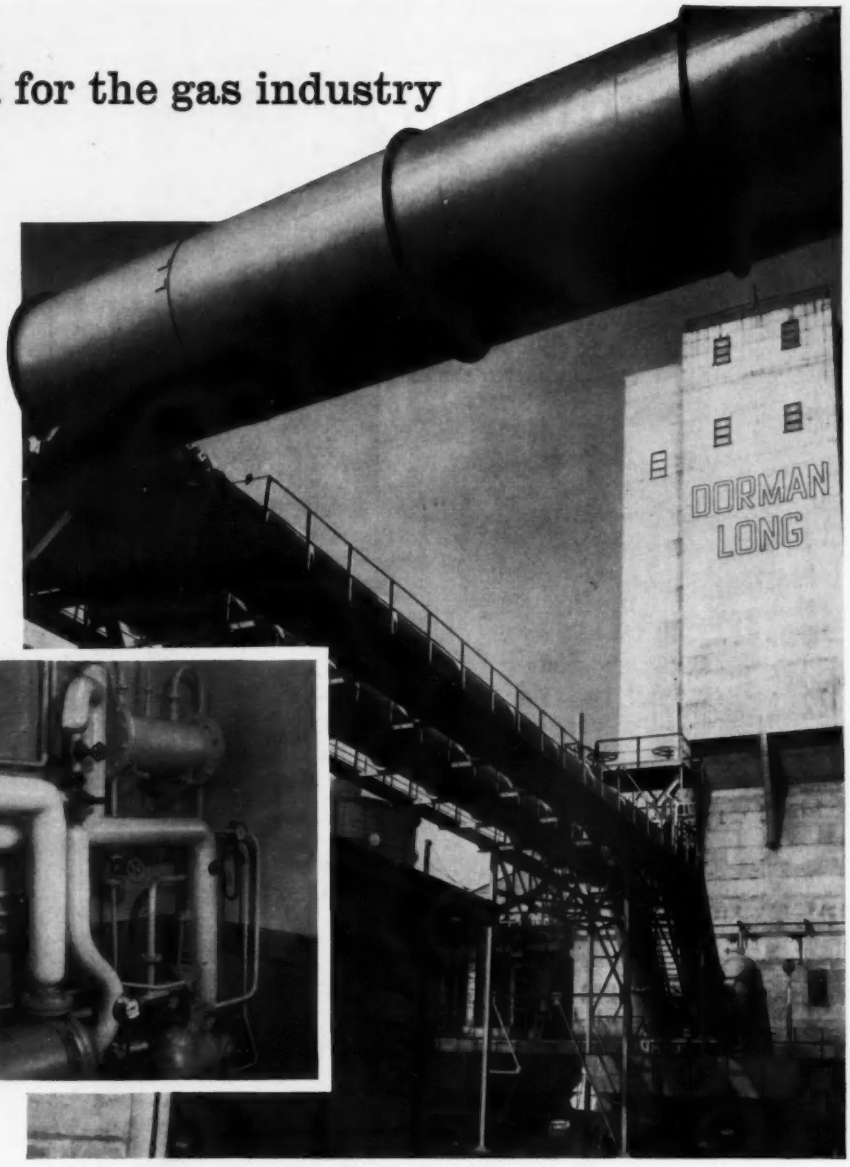
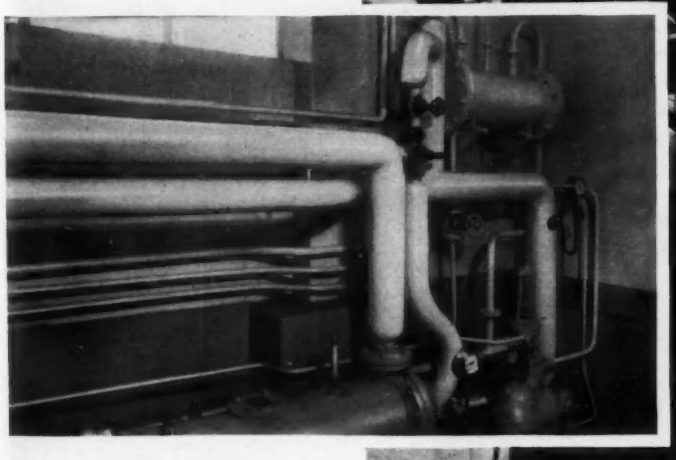


This photograph shows an 84-inch diameter Welded Steel Blast Furnace Gas Main to Coke Ovens at the Dorman Long Plant at South Bank, Middlesbrough, welded by the United Kingdom Construction & Engineering Co. Ltd., for the main contractors, Simon-Carves Limited.



The Calorifier Room, showing Heat Exchanger, Condensate Receiver, Lift Trap and Pressure Relief Valve, with Interconnecting Pipework, installed for Dorman Long by the United Kingdom Construction & Engineering Co. Ltd., to the order of Simon-Carves Ltd.

These photographs show just one example of the many large-scale projects entrusted to the capable hands of the United Kingdom Construction & Engineering Co. Ltd., who have years of experience in this sphere. Their technical experts are at your service to submit tenders to your specifications for projects in any part of the country.

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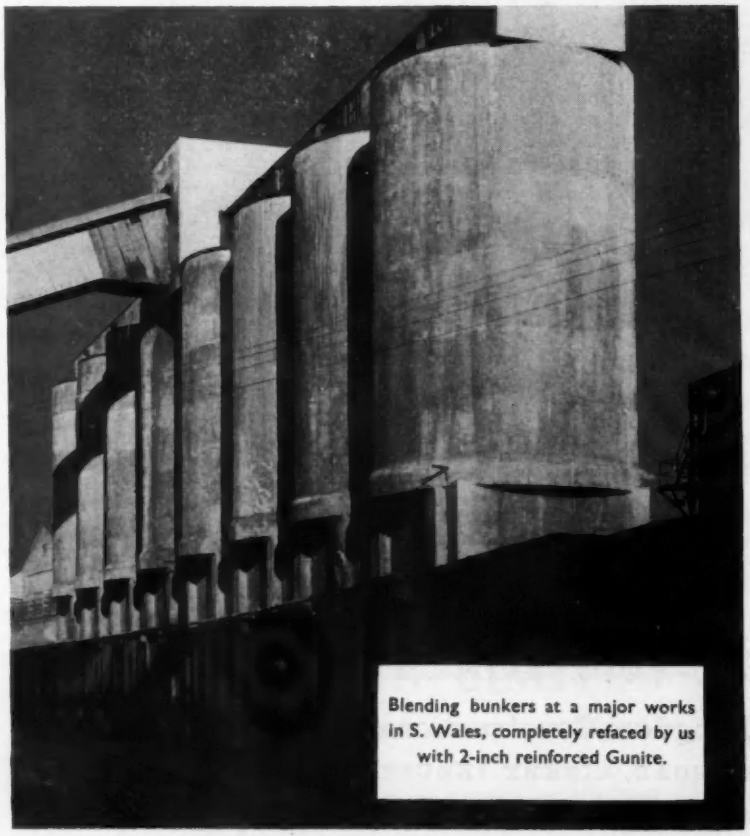

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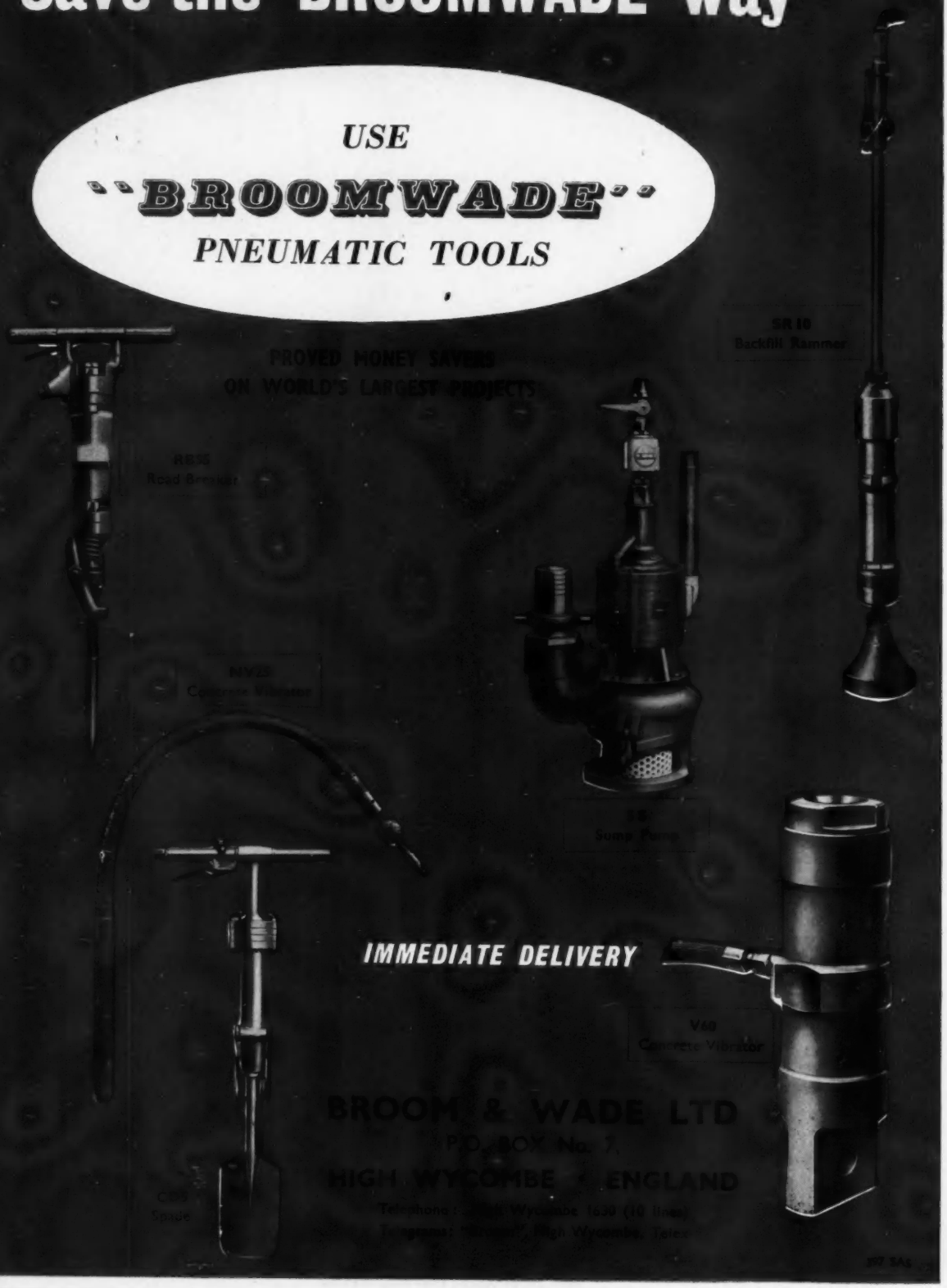

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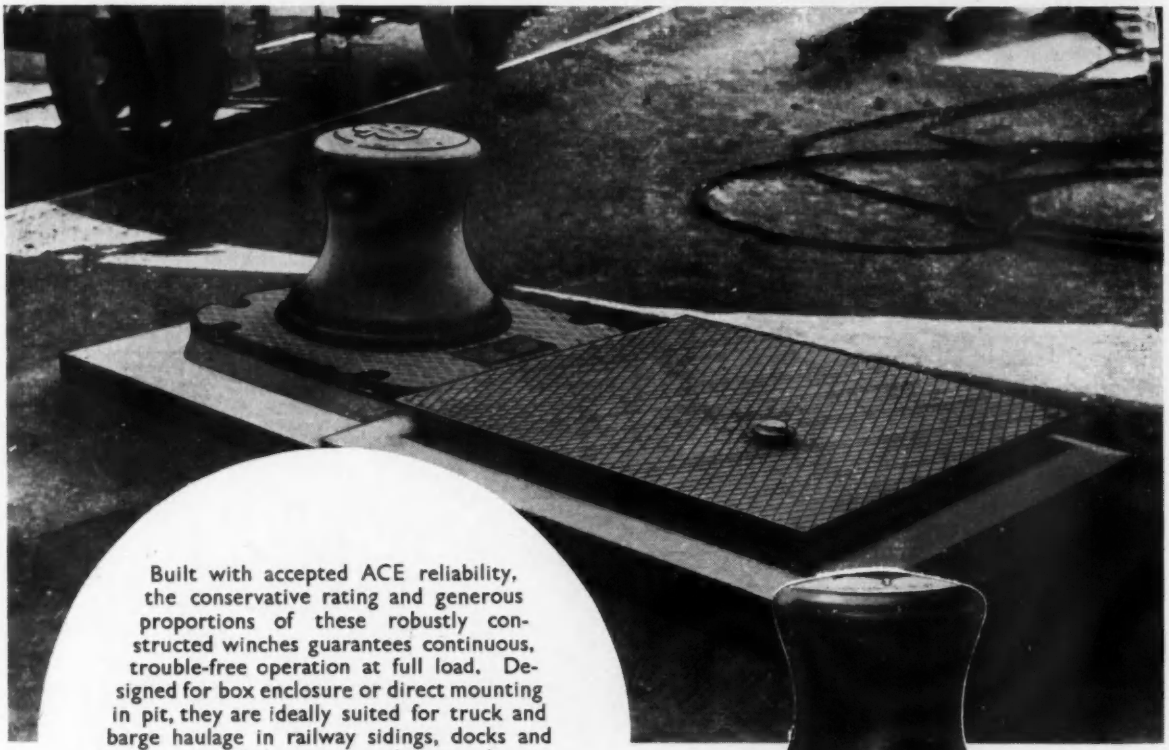

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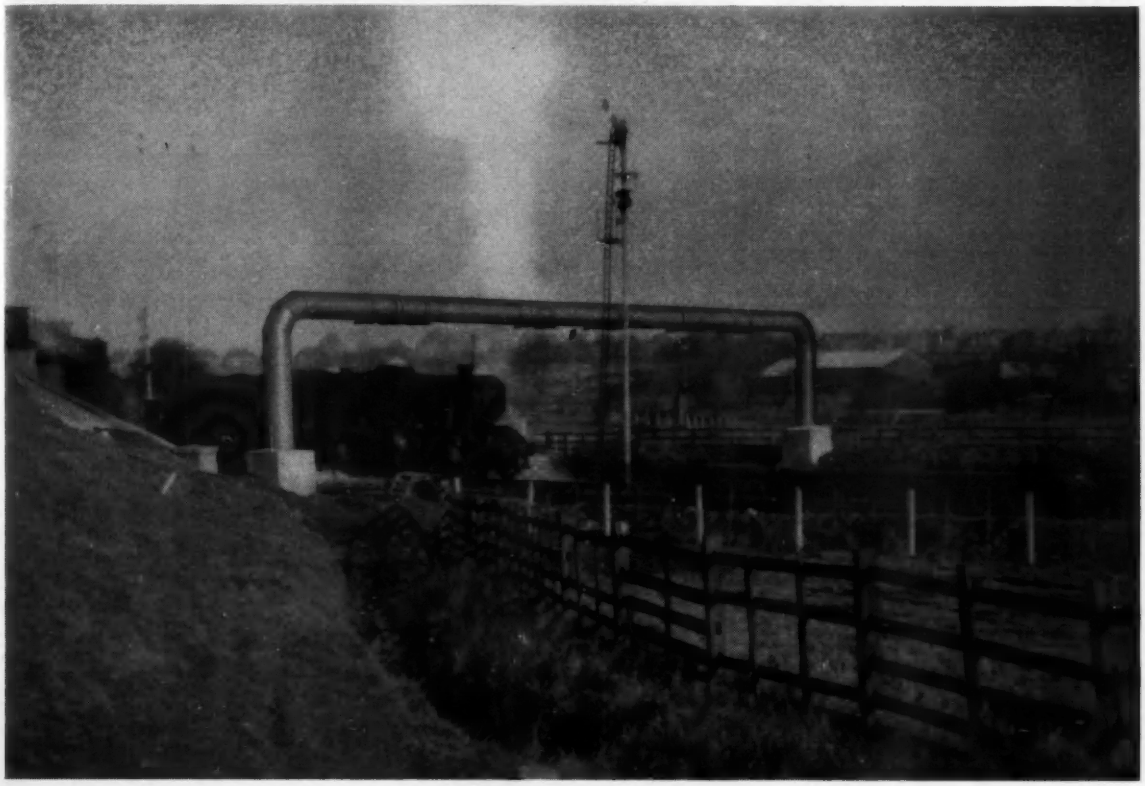

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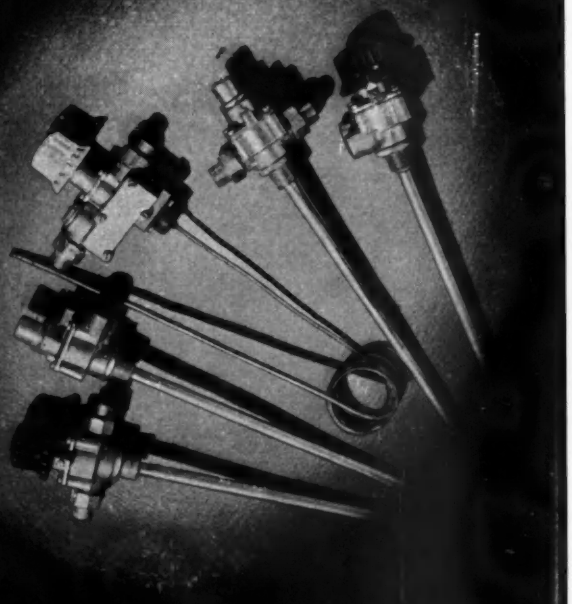

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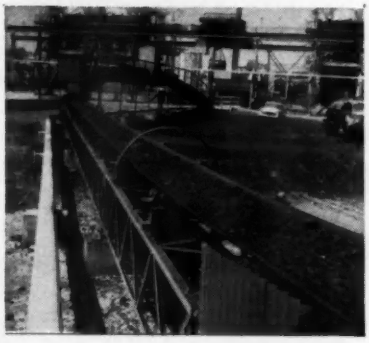
WITH BEARINGS IN MIND...

...consider these points when you buy conveyor idlers



2-not 6 bearings on Joy Limberoller idler

Among the outstanding features of the Joy Limberoller idler is the reduction — by 20% — of friction drag as compared with the conventional 3-roll steel idler.

The six bearings on a 3-roll idler often present difficult lubrication problems and four of the bearings are in hard-to-reach spots under the belt where dust and dirt can find an easy entry. Clog one of these bearings; slow or stop the roll...and replacement costs for belt and idlers start to soar.

The Joy Limberoller is a flexible steel shaft suspended from a bearing at each end, forming a natural trough and turning on its own axis. The two bearings never require maintenance or greasing and are located clear of the dirt.

Tough, resilient Neoprene covers the steel shaft and a series of moulded Neoprene discs support the belt. Flexibility of the idler centres the load, guides the belt, adjusts automatically to loading conditions and gives a smooth ride.

LIMBEROLLER BEARINGS STAY OUT OF THE DIRT

The natural load-carrying catenary of this flexible idler keeps the two bearings up out of the dirt zone. A smooth, 'no-bump' ride reduces spillage and lengthens belt life, and the idlers are long lasting, too — units in service have passed 600 million revolutions, carried nearly a million tons of material without detectable weakening or wear.

Really "sealed for life" Bearings on the JOY LIMBEROLLER IDLER

If there's a place to put grease into an idler bearing then dirt can also enter. That's why Joy Limberollers are sealed up tight for life.

The flexible steel shaft of the Limberoller has swaged shank ends which slip-fit into the inner race of the double row precision ball bearings. A snap ring locks the end in place and a Neoprene wiping seal keeps the grease in, dirt out. A second Neoprene ring and bearing cap held by a snap-ring seals the other end. The outer race, cadmium-plated, forms a cartridge to fit the idler supporting bracket. Bearings are packed with grease of 7-year-plus shelf life, rated for operational temperatures through -35°F to +275°F.

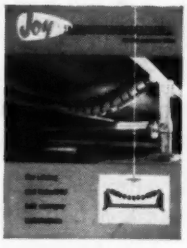
SEVERE RUNNING TEST PROVES THE BEARING

Under normal operating conditions Limberoller bearings rotate at approx. 510 r.p.m. under a belt travelling at 400 ft. per min. Taking the weight of material between two Limberollers as an average of 150 lbs., a force of 47.6 lbs. is exerted acting vertically on the bearing.

In the Joy-Sullivan laboratory a test rig is running a bearing at a speed of 750 r.p.m. (47% above normal) with a vertical force of 63 lb. exerted (32% above normal). The bearing runs continuously, in a box packed with fine coal dust and sludge. Under these abnormal conditions the bearing has so far passed 310 million revolutions with no detectable weakening.

TAKE 10 ON TEST

Materials handling engineers are testing Limberollers for themselves by installing ten in a tough spot on the belt. They're already delighted with the results — so take a tip and try the Ten Limberoller Test yourself.



Publication No. L.115 contains full technical details of the range of Limberoller idlers — write now for your copy.

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Manvers Centralization Scheme :

From the top of the newly constructed Coal preparation plant: a small section of the immense network of railway sidings.

The supply and installation of these sidings and the adjoining trackwork for the new Coal Carbonization and Benzole Rectification Schemes were entrusted to the Eagre Construction Co. Ltd., by the National Coal Board. Over 9,000 tons of Iron and Steel were used in the construction of the forty miles of track and 230 turnouts and Special Point and Crossing layouts comprising the combined railway Sidings.

Eagre's skilful planning and practical experience in the day-to-day working of Colliery Sidings ensured that this vast scheme was laid efficiently to schedule, and without the slightest interruption of existing Colliery traffic.

Photograph by courtesy of National Coal Board

Photograph by courtesy of National Coal Board

for a complete Track Service

Work begins at Cadeby: The National Coal Board again entrusts the Eagre Construction Co. Ltd. with a similar project. Earthworks, Drainage, Track Laying and ancillary works for thirteen miles of Sidings are now in progress at Cadeby Main.

In addition to its activities in the Nation's Coalfields the Eagre Construction Co. Ltd. has worked continuously during the past ten years for British Railways, the Gas Board, the United Steel Companies, and has carried out large Power Station Projects for the Central Electricity Authority.

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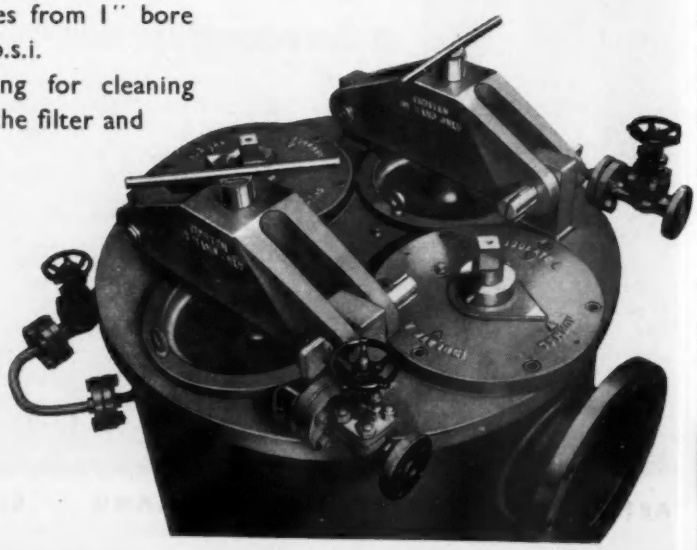

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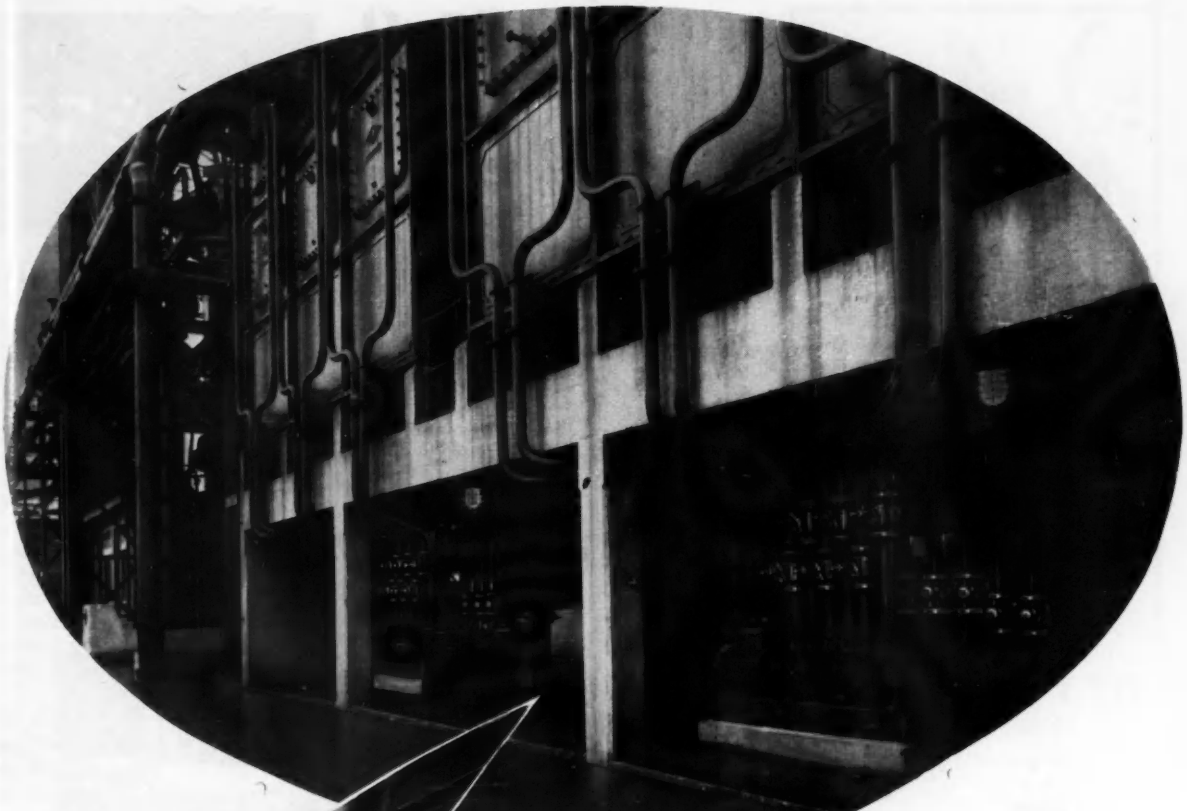

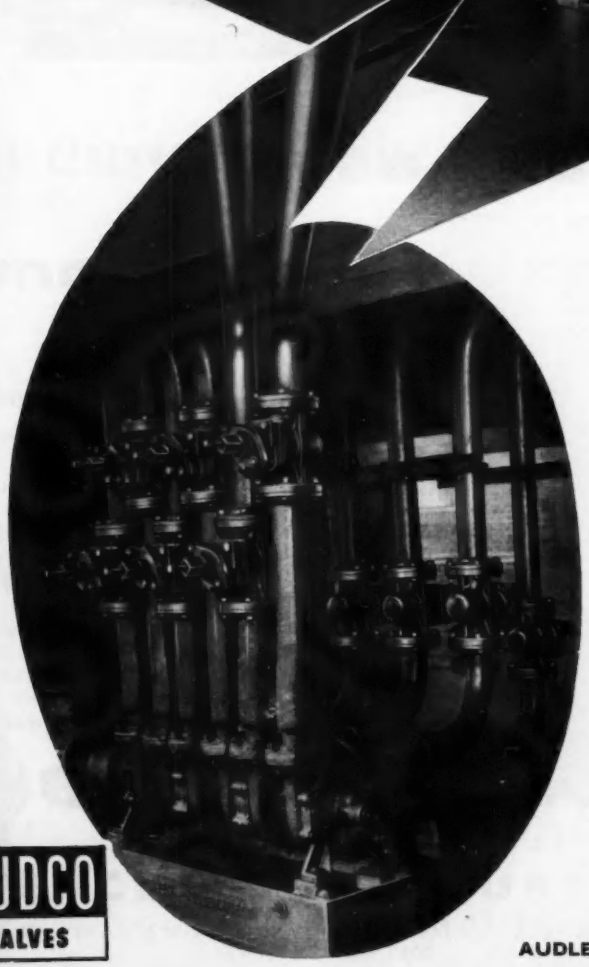

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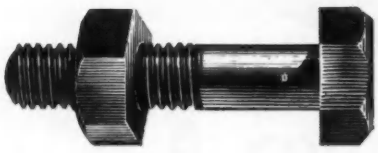

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To move a single machine or to transfer an entire works plant from one site to another — either is the kind of job that Thos. W. Ward Ltd., take in their stride. Whatever the problems of removal—weight, size, space restrictions—Wards can supply men, machines & experience.

Contrast this huge power press recently installed by Wards with the finger-size bolts produced in their millions by another company in the Group. These two examples of Wards' activities indicate in a striking manner how very wide is the range they cover.

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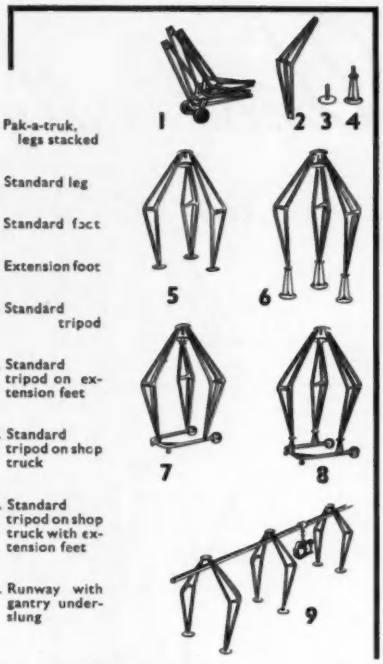

1. Pak-a-truk, legs stacked
2. Standard leg
3. Standard foot
4. Extension foot
5. Standard tripod
6. Standard tripod on extension feet
7. Standard tripod on shop truck
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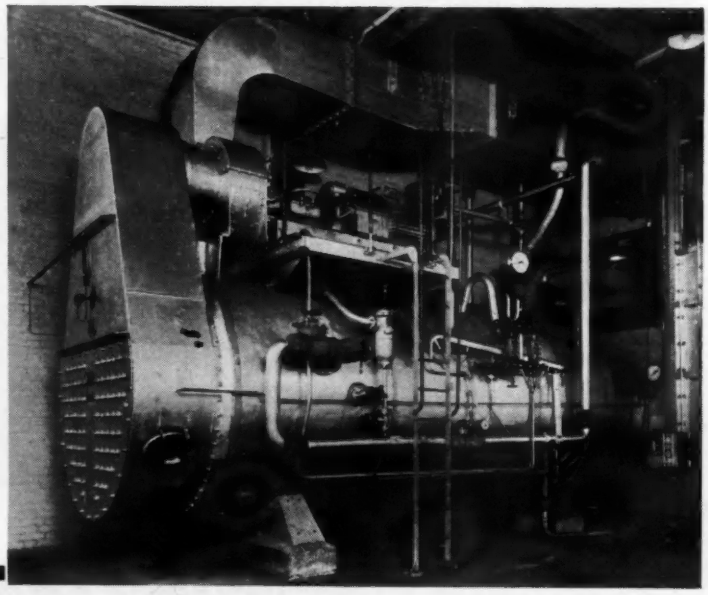
an answer to rising coal costs . . .

WASTE HEAT RECOVERY

IN THE

Gas Industry



One of six Spencer-Bonecourt Waste Heat Boilers operating on the West-C.O.L. Intermittent Vertical Retort Carbonising Plant at Howden Gas Works—Northern Gas Board.

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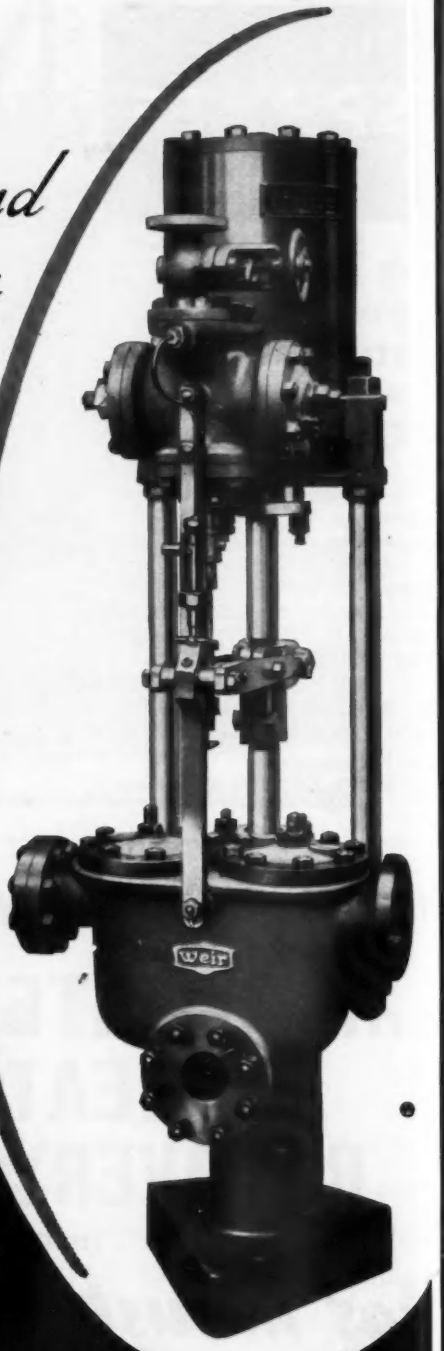

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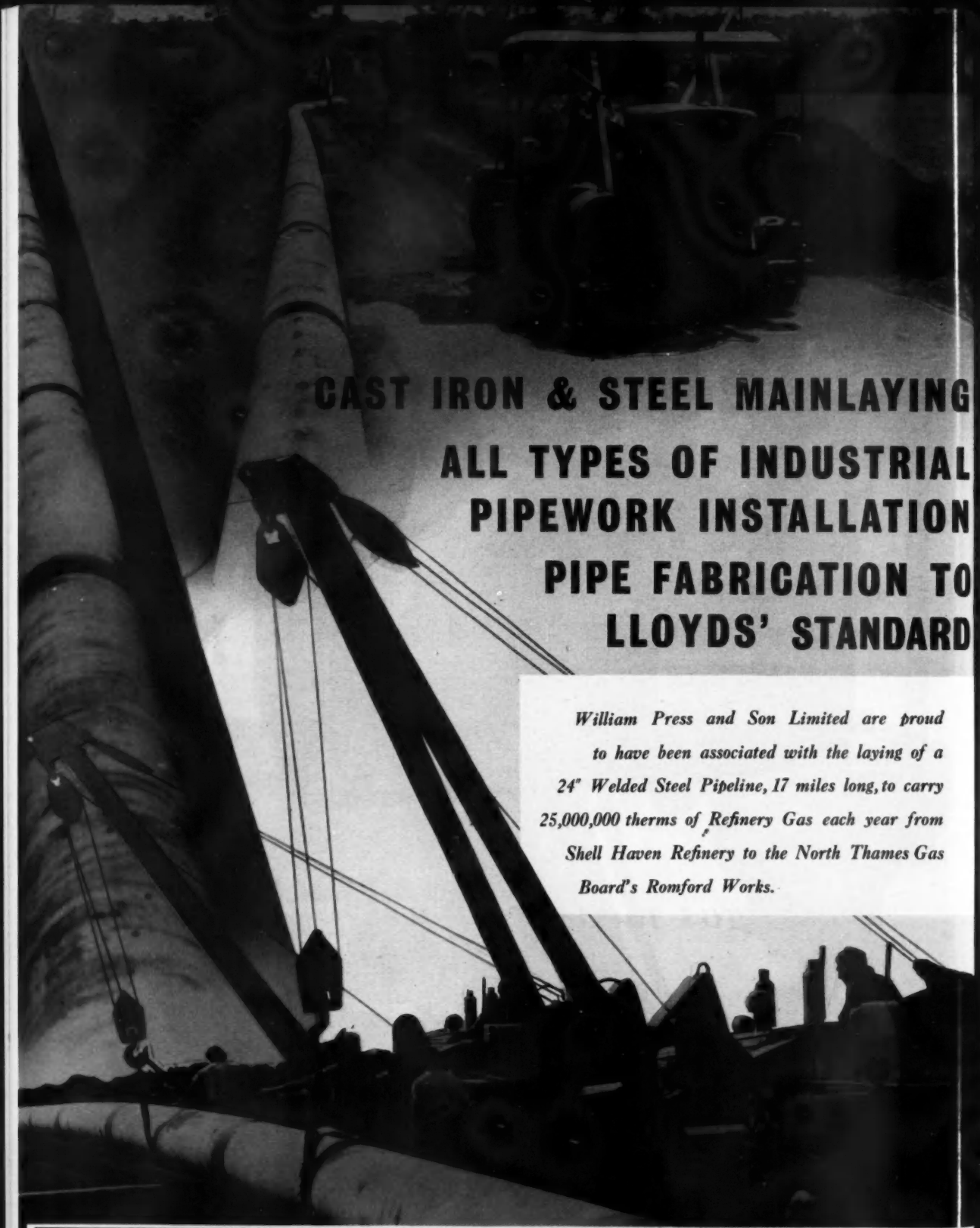

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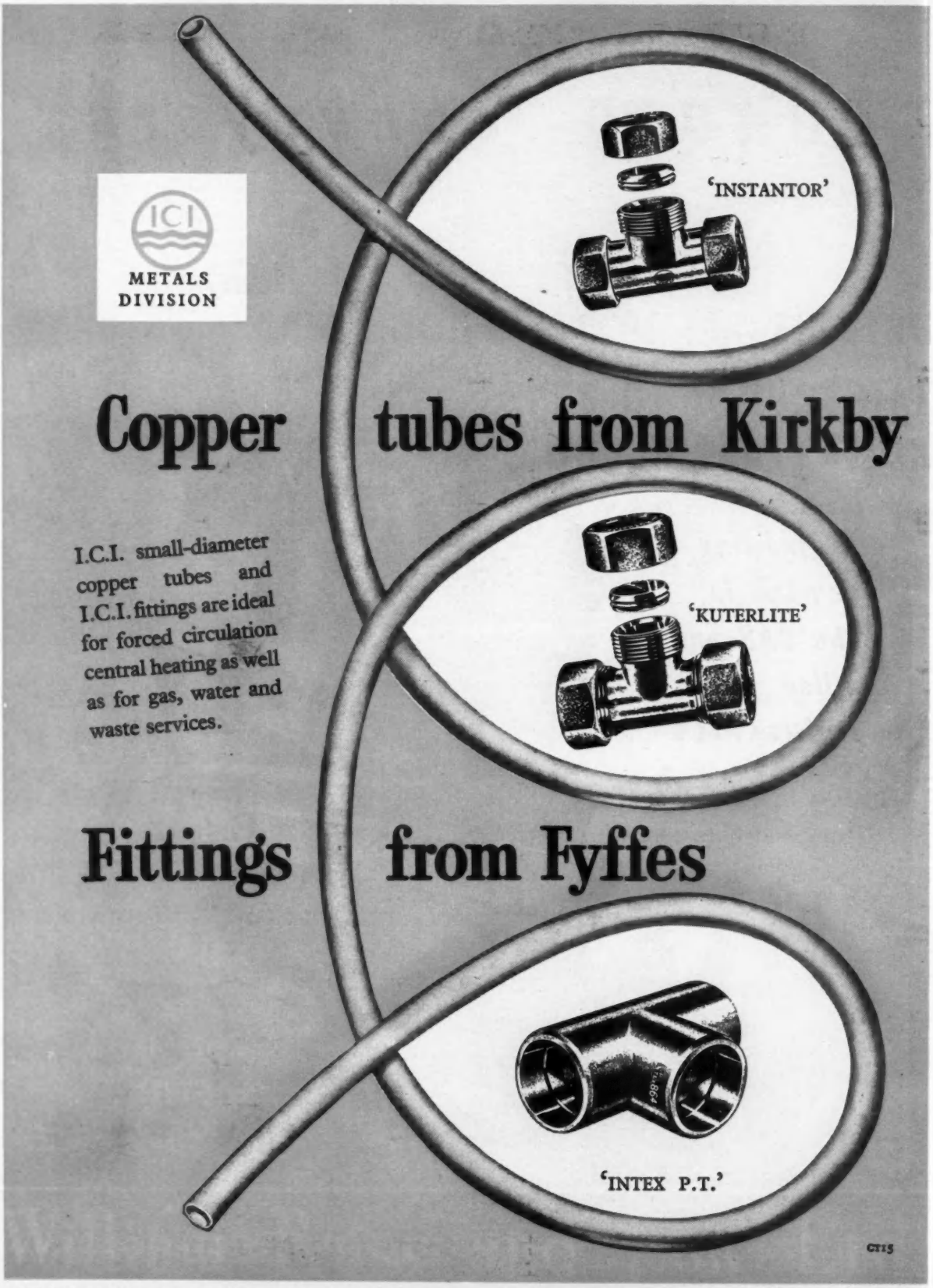
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Gas Journal

VOL. 292 NO. 4917 October 9, 1957

109TH YEAR

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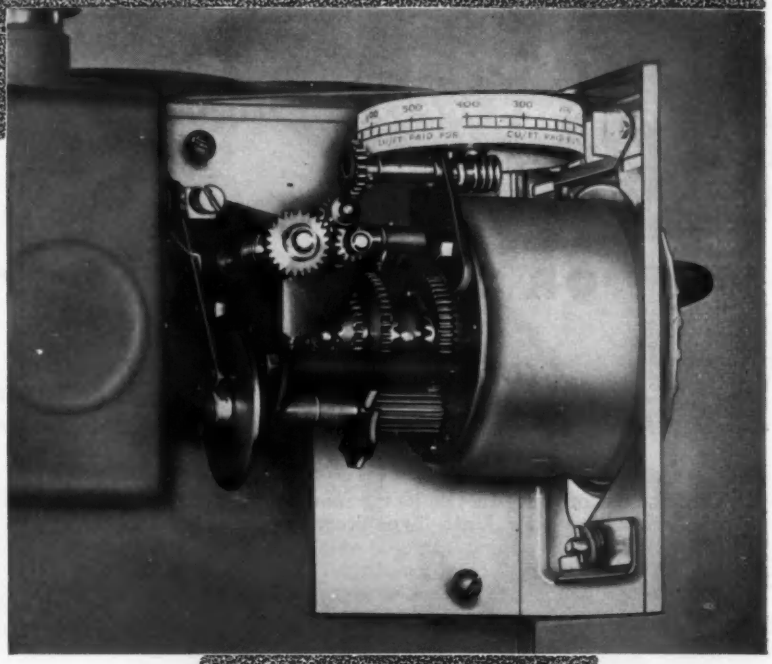

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Gas Journal

VOLUME 292. No. 4917. OCTOBER 9, 1957. 109th YEAR

A Year of Technical Progress

THE gas industry in 1956-57 may be said to have had a good year. All the area boards showed a surplus and thus have realised their long term policy of building on sound foundations that each area board had set out to do as soon as the preliminary surveys at the time of nationalisation had been completed. This was particularly creditable since conditions of trading in the industry during the year had been difficult. At over £3.8 mill. the surplus was most satisfactory when it is considered that the sales of gas throughout the industry had decreased by 1%. When the surplus or loss of previous years is taken into consideration, together with the reserve funds, replacement and obsolescence reserve and future taxation reserve funds, the balance at £4.649 mill. carried forward is an increase of about £900,000 on last year. The sums allowed for depreciation and amounts written off equalled £23.5 mill. These amounts are steadily increasing and it would seem likely that in the foreseeable future are likely to equal the annual capital expenditure. This would appear to be a most desirable feature of the report since in past years the amounts written off and charged to appreciation have been considered too small in some quarters compared with other industries not nationalised.

Capital expenditure still continues at a high level and for the year under review amounted to £51.3 mill., though there had been a tendency towards a restriction in capital expenditure during the year.

The Gas Council's report points out that such restriction means further deferment of projects which the area boards regard as essential.

In their opinion such restrictions are likely to be felt by the distribution systems, with the spread of integration and the general improvement of supply of gas especially to those districts where the increase in the use of gas may mean acute overloading of the existing mains at peak periods. In actual fact the cut in capital expenditure was commendably low at about £700,000.

The gas industry realises that its future prosperity depends on it being able to reduce its cost of production by employing the most up-to-date means of gas manufacture. In its efforts to do so, a great deal of research is needed to perfect and bring schemes embodying new ideas to fruition. Such a development is the total gasification of coal and the choice of process with which to carry it out. As things stand at the moment it would seem likely that the use of solid fuel may become obsolete in the years to come as the demands of the harassed householders to find a completely labour saving means of house heating grow more acute. Such a tendency encourages the use of gas and electricity, together with oil.

The researches now being followed by the industry include the hydrogenation of both coal and oil and the Lurgi process of high pressure gasification. Mention in the report is therefore made of the new 7.5 mill. cu.ft. per day plant being built in the North Western area to process oil, but with the intention of changing over to coal at the first possible moment. This might be termed revolutionary but may only be a return to hopes of a one fuel industry. It is, however, in keeping with the general trend of the industry in making use of all forms of available raw materials for gas making and the report refers to refinery tail gas and the natural gas available in reasonable quantities at Cousland near Dalkeith in Scotland. Perhaps the most revolutionary suggestion of all is the import of liquefied natural gas from overseas. Such a project was discussed about 18 months ago but the possibilities of anything practical coming of it seemed vague and improbable. The report discusses the possibilities of it happening and announces that the Ministry of Power has granted permission for its importation.

This confirms an announcement made by Sir Harold Smith that preparations were under way for the construction of a shore installation to receive cargoes of liquid methane from Venezuela and that arrangements were well advanced for its processing to convert the resultant gas into suitable form for its entry into the area boards' distribution systems. Sir Harold was careful to point out that at present the project was purely experimental to discover whether such gas compared economically with manufactured gas. Should this prove to be so, any doubts of the future prosperity of the gas industry need worry no one.

The gas industry is making great efforts to improve its methods of manufacture by the conventional processes now in common use. It has made some very great strides in this direction since nationalisation and has raised the thermal efficiency of gas production by

a further 1% during the year to 77.8%, or a coal equivalent of 350,000 tons of coal saved per year. Taken over the years, the cumulative effect since nationalisation accounts for a total coal saving of 2¼ mill. tons of coal a year.

Research into the improvement of gas utilisation and the design of appliances with a view to reducing capital and maintenance costs is the constant concern of the industry. Efforts are constantly being made to improve both gas and coke burning appliances and the report announces that even greater importance is being given to automatic ignition for cookers, which are cheaper and more reliable. This is a most important consideration in the face of competition with electricity. The modern electric cooker with all its means of automatic switching in and switching off by means of preset timing devices is a difficult problem for the gas industry to solve. It appears that it can only be done by the use of electrical ignition.

The report makes it clear that the importance of the training of those entering the industry is realised to be the only way of attracting the right type of recruits. Many of the area boards have started their own training schemes which, in addition to 'sandwich' courses whereby the trainee does six months practical work followed by six months at a technical college, often include regular training courses organised by the boards themselves. In the case of at least two boards courses are run for gas fitters whereby they learn the rudiments of their trade and attain some degree of proficiency before they go out 'on the district' with a competent fitter. This is similar to training schemes in some of the big engineering firms which realise that the young man of to-day who has the choice of so many jobs needs to be convinced that such a job as gas fitting where skill plays a part is a good deal more rewarding though at first sight it might seem to be less well paid. Courses for those aspiring to higher management are not lost sight of. Selected members of the staff are recommended for the courses at Brooklands County College and when a vacancy occurs, members of the gas industry have taken the courses at the staff college at Henley.

The Report points out that the turnover of labour which has been a most difficult problem in the last few years seems to have shown signs of lessening over the past year especially in the Midlands. It is thought that the uncertainty of the permanence of many well paid jobs in the motor industry last winter may have compelled many who were keen on the 'big money' to be content with less well paid but steady jobs.

Sales Harvest at Harrogate

TWO major tasks face the gas industry: To produce a cheaper therm, and to improve its sales organisation. Of the two the former might be expected to present the greater difficulty and yet much useful, and even exciting, work is being done towards that end. In contrast the sales side, having rather belatedly realised that all is not well with their methods and rate of progress, are having difficulty in adjusting their sights to a new and more elusive target. The fifth Gas Sales and Service Conference, held last week at Harrogate, displayed this all too clearly, for although the guest speakers were not lacking in ideas and the ability to project them, in general the delegates showed little evidence of an ability to respond fully to the call for brisker thinking and a more challenging approach. However, there may well be a delayed action reward.

In terms of organisation, locale, and programme the conference had much to commend it and it would be unfair if, before analysing its weaknesses, we did not draw attention to what was good. It will be remembered that the last conference in the series was held at Ayr and the pleasure induced by the civilised grace and comfort of Harrogate after the utilitarian chill of the holiday camp can hardly be over-emphasised. With its excellent layout and acoustics the Royal Hall has a warmth of atmosphere and a pleasantly old-fashioned plushy quality which immediately evokes the spirit of entertainment rather than discussion. Thus on the Tuesday morning one subconsciously waited for the orchestra to tune up, the curtain to rise, and the concert to commence. When the ensemble, under the direction of Sir Harold Smith, appeared and the performance began it was with a graceful overture by the Earl of Scarbrough, Lord Lieutenant of the West Riding, and Councillor Miss Alice Wardle, the Mayor of Harrogate. There followed in turn a short, jocular piece by the conductor, and a functional concerto with Mr. C. Harold Leach as soloist, the last movement of which was of fugal design in which the theme was discussed by several voices. The result, if we may say so, was classical rather than inspiring, but the morning certainly had its rewards: Sir Harold (like Sir Thomas) has a happy way with unscripted bandinage; for all his diverting elegance Mr. Leach is no mean performer and is known to practise what he preaches; while a blending of voices is, after all, the very purpose of such an occasion.

However, in the afternoon when the company became divided into four sessional meetings, certain flaws in the planning became evident. Those with industrial interests gravitated naturally towards the meeting at which Mr. J. Austin Lowe, Director of Thermic Equipment and Engineering Co., Ltd., asked 'Why Sell Gas Furnaces?' and Mr. W. H. Tarn, Industrial and Commercial Gas Engineer of the Wales Gas Board, talked on 'Selling Industrial Gas.' This proved to be a rewarding session, benefiting from the deft chairmanship of Mr. Roy Hayman. For the non-industrial delegates —who comprised the overwhelming majority of the company—there was a difficult choice to be made. There were three meetings, all dealing with subjects entirely relevant to the sales representative, and although these and the industrial session were to be repeated the following morning, obviously it would only be possible to attend two. It is difficult to understand why a total of four sessions should have been arranged when three would have kept everybody happy.

In a way all three of these non-industrial sessions were centred on dealer outlets—a subject of very great im-

portance to us at the present time. Mr. J. M. A. Smith, Assistant Manager Director of the Ford Motor Co., Ltd., explained how his impressive organisation had been built up, while Mr. Eric C. Skelding, National Secretary of the National Federation of Ironmongers, pleaded for a 'New Deal for Dealerships.' Most of those who attended these two sessions would probably agree that interest in Mr. Smith's address tended to be personal rather than professional—in other words, although a person of such standing associated with such an astonishingly successful business both commands respect and excites curiosity, points of similarity between marketing cars and cookers proved to be fewer than one might have hoped. Mr. Skelding, on the other hand, proved an ideal speaker, combining wit and vigour in his post mortem on some of the gas industry's unsuccessful dealership schemes. The first time this sectional meeting was held things got badly out of control, but the following morning order was maintained and a rewarding session resulted. For all that few real conclusions could be drawn, save perhaps that it was often the small plumber who proved to be a better dealer proposition than the ironmonger and that one must not expect too much too soon.

Rather less satisfactory was the meeting at which Mr. C. F. Richards, Joint Managing Director of Morphy-Richards Ltd., who of course has combined gas and electrical interests, gave 'The Manufacturer's View' and Miss Joan Storey, Home Service expert of *Housewife* magazine, 'The Customer's View.' Here again the discussion tended to be inconclusive and too many speakers chased after some of Miss Storey's more trivial points instead of seizing the opportunity to pick the brains of an eminently successful manufacturer.

At the third sectional meeting of general interest Mr. H. C. Wilson Bennetts, Director of Sales, Allied Ironfounders Ltd., described an 'Adventure in Production and Selling.' Here at least one or two memorable contributions were made, notably by Mr. D. C. Henderson, Assistant Commercial Officer of the North Eastern Gas Board, whose comments on cooker design were refreshingly frank. Statements made by the author and by Mr. A. V. Horsfall, Sales and Service Manager of the West Midlands Gas Board, are worth quoting. The former said: 'A salesman should be paid what he earns, and if he earns more than the chairman of the board, does it matter?' The latter said: 'I personally believe there was never such a glittering future before the gas industry in all its period of life since the early 19th century as there is today, provided we believe that and go out and make a fight.' An admirably stirring remark in a conference in which optimism was conspicuous by its absence.

When the whole company reassembled on Wednesday afternoon it was to hear Mr. Charles Knights, the author of the Gas Council's new Sales Training Manual, introduce his creation with all his customary aplomb. It had been whispered that he was unlikely to get away with certain of the contentions made in this very excellent book and that the opposition was massing its forces in preparation for discussion time. Alas, the big bang proved to be a damp squib indeed and the whole thing tended to peter out despite the all too short contribution by Mr. Alex Anson, Sales and Advertising Director, Granada T.V. Network Ltd., and the particularly good chairmanship of Mr. J. H. Dyde for whose contribution to sales training the gas industry should be eternally grateful.

Finally Sir Harold presented the Gas Council Challenge Trophy to Mr. W. J. Blanchard, whose paper 'Half Way' was a worthy winner of the Gas Salesmen's Circles' competition, and Dr. R. S. Edwards summed up the conference.

We were left with two overwhelming impressions: (i) that throughout the papers had tended to place too much emphasis on matters which came within the province of policy and were thus out of the control of the ordinary salesman; and (ii) that we heard far too little of the illustrious guest speakers and far too much indifferent discussion. In enlarging on the last point we must make a confession. In the past we have advocated the allocation of more time at these conferences to free discussion. Now that the organisers have very substantially increased the facilities for this interchange of ideas, we wonder if we were right. Perhaps the discussions at Harrogate would have been all right if they had not robbed us of the chance to listen to the group of highly successful, interesting and entertaining people who were the authors of the papers. These papers had been circulated in advance and no more was required of the authors at the conference than to say a few introductory remarks and answer questions.

We believe our point was proved at the Home Service session on Thursday, the only session at which the guest speaker gave his address in full. In the opinion of many who attended, this was by far the most stimulating session of the lot, and the address, on 'Advertising and the Housewife' by Dr. Mark Abrams, Director of Market Research, at the London Press Exchange Ltd., a contribution of absorbing interest. This was the only occasion on which one could enjoy to the full the pleasure of hearing an acknowledged expert on his subject speak without a niggardly limitation on time. The success of this session proves another point too—that Home Service must no longer be banished to the position of a mere appendage to the conference. It is an essential part of the sales structure and as such deserves the courtesy of proper recognition and integration within the conference as a whole.

During the sectional meetings one point intrigued us. It was that at each of these meetings the preponderance of discussion stemmed from delegates from the board represented by the chairman, usually the chief sales officer. Why? Was it due to a determination to rally round the chief, from a natural curiosity to see how he would manage things, or from a sort of 'voluntary compulsion'? The matter is of some importance in that at any discussion on common sales problems the maximum value lies in the most varied expression of opinion and experience.

Summing up, this was an interesting conference with some excellent papers, but in our view it did not go a long way towards combating the steadily hardening competition with which the industry is having to contend. The emphasis was primarily on new business; another time perhaps more stress might be laid on how to increase the consumption of gas per existing consumer.

Abstracts of all papers and full reports of discussion will appear in the Conference Number of *Gas Service and Domestic Coke*, published later this month.

Personal Notes

MR. H. C. EXELL has been elected President of the Purchasing Officers Association for 1957-58. Mr. Exell is Controller of Stores at the North Thames Gas Board and recently his responsibilities were extended to include Stores Testing. He is a member of the Gas Council Standards Committee and a representative of the Gas Council on the Gas Industry Standards Committee of the British Standards Institution. In 1946, Mr. Exell was elected Chairman of the National Education Committee of the Association and held this position for 7 years. In 1951 he was one of the Association's two representatives on the Productivity Team which visited the U.S. to study Production Control. Born in Bradford, Mr. Excell has lived in London since he left Leeds Grammar School to go to Kings College, where he gained his B.Sc. (Honours Chemistry) and then took his M.Sc. in Fuel Chemistry. The whole of his business career has been spent in the gas industry, which he entered in 1923 as an assistant in the laboratory at the Stratford works of the Gas Light & Coke Company. Two years later he transferred to the research department, and in 1933 he joined the Managing Director's department to assist in the work of various technical committees, not the least of them being the newly formed Standardisation Committee. Three years later, he was made Secretary of this Committee, which led to his appointment in 1938 as Assistant Stores Buyer. A year later he became Stores Buyer and in 1947 was promoted Controller of Stores.

Mr. H. C. Exell.

MR. MACINTOSH WILLIAMS, who has been Chairman of Tar Residuals Ltd., since the Company's formation in 1927, has resigned from that position, and MR. R. B. POTTER, who is also Chairman of Simon-Carves Ltd., has succeeded him in that position. Mr. Macintosh Williams has been elected the first President of the Company. MR. J. H. HUGHES, a Director of the Company since 1927, will be retiring at the end of this year, and MR. G. R. VOSPER, the present Secretary, and MR. J. R. COLLINGS, the Manchester office manager, both of whom have been with the Company since it was formed, have accepted invitations to join the Board. MR. B. M. WILLIAMS and MR. D. F. WAUGH have been appointed the Joint Managing Directors.

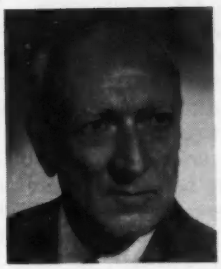
MR. ALEXANDER SIMMONS, who was a Safety Officer with the North Thames Gas Board, has been appointed to this post by the Southern Gas Board. Mr. Simmons, who is a member of the Institution of Safety Officers, started his career as an engineering apprentice with John Brown and Co., Clydebank, and from 1929 to 1946 was a senior engineer on large passenger liners in the Orient Steam Navigation Company's fleet.

SIR GEORGE BEHARRELL has resigned from the Presidency of the Dunlop Rubber Co., Ltd., and therefore from the Board, but has consented to act as an honorary Consultant. LORD BAILLIEU has resigned as Chairman of the Company but is remaining on the Board and also succeeding Sir George Beharrell as President of the Company. MR. G. E. BEHARRELL has been elected Chairman of the Board in succession to Lord Baillieu and will continue to act as Chief Executive of the Company. MR. JOHN H. LORD has been appointed a Managing Director, as also has MR. R. M. GEDDES. MR. T. E. PEPPERCORN has been appointed an Executive Member of the Board.

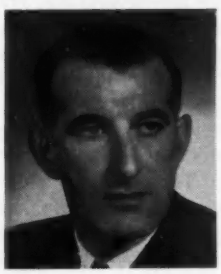
MR. W. H. HARRISON and MR. E. HOLLAND-MARTIN have relinquished their Directorships of British Aluminium Co., Ltd., and the vacancies thus created, together with one already existing, have been filled by the appointment of MR. G. A. ANDERSON as Director and General Sales Manager, MR. W. B. C. PERRY-COSTE as Director and General Production Manager, and MR. J. SALTER as Director and General Production Manager. MR. G. W. LACEY, who was Director in charge of Sales, has assumed the title of Commercial Director.

MR. L. R. MEEK, formerly of Leven, Fifeshire, has joined Horseley Bridge and Thomas Piggott Ltd., as Contracts Manager, gas plant and plate work division.

MR. W. G. RUSSELL, M.B.E., Manager of the motor transport department, has retired from the National Benzole Co., Ltd., after 34 years' service. He will be succeeded by MR. A. MORRIS, M.B.E. Mr. Morris was educated at the Guisborough Grammar School and joined the R.A.F. in 1938. He was commissioned in the Technical Branch and during the war served in Bomber and South East Asia Command, India. He was awarded the M.B.E. in 1945. Since the war he has served in R.A.F. Transport Command and took part in the British North Greenland Expedition 1952-1953. On the completion of his R.A.F. service in 1956 he joined the National Benzole Company as Assistant to the Transport Manager.



Mr. W. G. Russell.



Mr. A. Morris.

MR. F. S. HUNTER, District Engineer and Manager of the Bridlington Undertaking, North Eastern Gas Board, retired at the end of last month.

Diary

October 11.—SOCIETY OF ENGINEERS: Annual Dinner in the House of Commons (by courtesy of E. Partridge, C.B.E., M.P.). Reception 6.30 for 7 p.m., followed by conducted tour of the Houses of Parliament before dining at 8 p.m. Principal Guest: Sir Harold Smith, Chairman of the Gas Council.

October 11.—LONDON JUNIORS: Prize giving for 1956-57 session, induction of new President and Presidential Address.

October 16.—WALES & MON. JUNIORS: Paper by K. R. Edwards, Barry.

October 16.—EASTERN SECTION, I.G.E.: Visit to new factory of Vauxhall Motors, Ltd., Dunstable.

October 16.—SOUTH WESTERN SECTION I.G.E.: A.G.M. and Chairman's Address.

October 18.—MIDLAND SECTION, I.G.E.: Visit to the Staveley Iron & Chemical Co., Ltd., near Chesterfield. 10.45 a.m. 'Some Aspects of and Recent Developments in Plant for the Compression of Gas on Distribution Systems,' by R. W. Nelson. 3 p.m.

October 21.—EASTERN G.C.C.: Connaught Rooms, Great Queen Street, Kingsway, London, W.C.2. 11 a.m.

October 21.—NORTHERN G.C.C.: Gas Board Offices, 30, Grainger Street, Newcastle-upon-Tyne. 11.15 a.m.

October 24.—MIDLAND JUNIORS: Visit Northern Aluminium Works, Banbury.

October 29.—EASTERN JUNIORS: King's Lynn. 'The Use of Ammoniacal Liquor as a Nitrogenous Fertilizer,' by W. W. Law.

November 5 and 6.—COMBUSTION ENGINEERING ASSOCIATION: A study in detail of N.I.F.E.S. third progress survey. Old Swan Hotel, Harrogate.

Seventh Year Reports and Accounts Reveal that

For the First Time All Boards Show a Surplus

—but Gas Sales Are Down

A NET surplus of £3,803,856 on a gross income of £370.6 mill. was the aggregate result of the area boards' trading during the year, states the Gas Council in its annual report and accounts, released yesterday. This surplus is arrived at after charging £23,231,018 for depreciation and amounts written off and £18,962,499 for interest. For the year 1955-56 the surplus was £531,628.

After making adjustments for previous years and bringing in the balances on revenue account at March 31, 1956, all boards had disposable surpluses, the total amounting to £8,409,196 (£6,304,402). From this sum £1,045,000 (£1,325,000) has been placed to reserve funds, £2,579,611 (£975,000) to replacement and obsolescence reserves, and £136,000 (£260,000) to reserves for future taxation, leaving £4,648,585 (£3,744,402) to be carried forward to 1957-58. (The figures in brackets are for 1955-56).

Investment

In the eight years since vesting date £369 mill. has been invested in fixed assets, of which £130 mill. has been provided from depreciation.

The total net revenue expenditure of the Council for the year was £1,682,693, compared with the total of £1,690,519 for the financial year 1955-56, a decrease of £7,826. There was a decrease of £43,288 on publicity expenditure to £482,725; expenditure on research, testing and development, for which the Council was primarily responsible, increased by £77,234 to £529,256. Exploration for natural gas was continued during the year and the amount of £81,358 which figures in the accounts under this heading mainly consists of payments made to the BP Exploration Company, who are carrying out the investigation on behalf of the Council. The Council also made further contributions to the National Industrial Fuel Efficiency Service, and in addition has lent £26,044 to meet capital expenditure. These contributions, over a period of five years from April 1, 1954, are not to exceed £500,000.

The amount of capital expenditure in 1956-57 which the Minister, after consultation with the Gas Council, approved for the gas industry was £52 mill. (actual expenditure was £51.3 mill). This figure involved a cut of nearly £10 mill. in the total of the capital development programmes originally submitted to him by the area boards. During 1955-56 work included in the programmes approved for that year and estimated to cost £3 mill. was deferred at the Government's request. The cut in the 1956-57 programmes therefore meant a further deferment of a number of projects for production and distribution regarded by the boards as essential for their economic development. The report points out that continued deferment inevitably entails a risk, at least for some boards, that the distribution system in some parts of their areas will be overstrained at times of heavy demand. The Minister approved the sum of £59 mill. as the capital expenditure of the industry in 1957-58.

Oil gasification plants now figure prominently in the industry's capital development programme. At March 31, 1957, 14 plants were at work, six having been installed during the year, and 25 more were under construction or on order. The latter plants are due to be completed at various dates up to March, 1959. The total capacity of the 39 plants will then be 113 mill. cu.ft. of gas a day. The quantity of oil which they will require will be of the order of 388,000 tons a year; the coal which they will save is estimated at over a million tons a year.

Before research into the gasification of oil was begun, the gas industry had started to investigate the possibility of completely gasifying types of coal not normally considered suitable for gas-making. In the year under review the Council decided that the stage had been reached when investigations in the laboratory should be supplemented by work on a commercial-scale plant. The ultimate objective of this plant is the hydrogenation or complete gasification under pressure of low-rank, small coal, but it is considered that the problems which the process involves will be solved most quickly by first gasifying oil feedstocks. This therefore will be the initial task of the 7½ mill. cu.ft. a day plant which will be erected in the area of the North Western Board. Until the plant has been shown to be satisfactory as an economical gas-producing unit, the operation will be carried out as part of the research programme of the Council.

Good progress was made by the North Thames and Southern Boards in the installation of plant and the laying of mains to enable them to take supplies of 'tail' gas from the refineries of the Shell Petroleum Co., Ltd., and the Esso Petroleum Co., Ltd., respectively. Each of the agreements made by the Boards is for ten years and provides, in the case of the North Thames Board, for a guaranteed supply of 25 mill. therms of refinery gas a year from Shellhaven, and in the case of the Southern Board for a supply of 17 mill. therms a year from Fawley. The first supplies from Fawley have now been received at Southampton; supplies from Shellhaven are expected to be taken at Romford, where more extensive work was required for the installation of reforming plant, in the middle of 1958. The quantity of town gas which will be available when the agreements are in full operation will be equivalent to that which would be produced by carbonising 365,000 tons of coal a year; and there will also be some saving in gas oil and heavy oil.

Natural Gas

The main piece of work during the year in the Gas Council's search for natural gas was the completion of the well at Fordon, some eight miles south-east of Scarborough. At Cousland, near Dalkeith, the Scottish Gas Board has laid a main from the wellhead to its works at Musselburgh to take a supply of natural gas. For the first time, consumers in Britain will be taking natural gas as part of their town supply before the end of 1957. On behalf of the Gas Council the North Thames Gas Board is making a comprehensive survey of the possibility of importing natural gas in the form of liquid methane.

The report states that 'At the end of the year the stage had been reached where the possibility of importing a trial cargo of liquefied methane into this country could be considered.'

At the Midlands Research Station the chemical engineering block was completed during the year. This building is designed to house pilot plant on a large scale, the immediate purpose being experiments in the manufacture of gas by high pressure hydrogenation and the gasification of coal and oil. The new building and laboratories of the London Research Station which were opened in

How They Fared

Board	Net Surplus for 1956-1957 £
Scottish	370,253
Northern	595,704
North Western	786,804
North Eastern	310,785
East Midlands	366,772
West Midlands	450,399
Wales	67,935
Eastern	167,730
North Thames	259,887
South Eastern	234,560
Southern	180,019
South Western	13,008
	3,803,856

the previous year are now fully occupied with experimental work. Much of the extra space is devoted to pilot plant.

New manufacturing plant to the capacity of 102 mill. cu.ft. a day was installed during the year and plant to the capacity of 75 mill. cu.ft. scrapped. Further progress was made also in integration, and during the year manufacture ceased at 77 more stations, supplies of gas being provided from the larger and more economic units. At vesting date there were 1,050 separate manufacturing stations; now there are 611.

Improved Efficiency

The result has been a further improvement in the efficiency of production which, measured by the ratio of the thermal output of gas, coke, breeze and tar to the thermal input of coal and oil, moved from 76.8% in 1955-56 to 77.8% in 1956-57. The improvement in 1956-57 was equivalent, in terms of coal, to a further saving of 350,000 tons; and the cumulative effect of the progressive increases in the efficiency of production since vesting day is that in the year under review the industry required the equivalent of 2¼ mill. tons of coal less than it would have required had gas been made and other products recovered at the efficiency of 1948.

The average cost of coal in 1956-57, including transport and handling charges, was 109s. 2d. a ton, and the quantity used for gasmaking was 27,668,000 tons, compared with 27,841,000 tons in 1955-56. At the beginning of the year stocks of coal held by the area boards amounted to 2,246,000 tons, or the equivalent of 3.6 winter weeks' consumption.

Coal Price

The pithead price of coal was increased by 8% on June 1, 1956, which meant for the gas industry an average increase of approximately 6s. 7d. a ton. This increase followed one of 18% or 12s. 6d. a ton in July, 1955, and since the close of the year has been followed by a further increase of 8% or an average of 7s. 1d. a ton, effective from July 1, 1957.

The production of water gas, at 278.0 mill. therms, was less by 89.3 mill. therms, or 24.3%, than in 1955-56. The quantities of coke and oil used for gasmaking (the figure for oil including that used in oil gasification plants) were respectively 1,129,400 tons and 354,600 tons, compared with 1,392,400 tons and 501,700 tons in the previous year. The quantity of gas purchased from coke ovens was 456.7 mill. therms, an increase of 11.4% over the quantity purchased in the previous year.

Of the inland sales of coke, 3,482,000 tons, or 37.6%, were sold by boards direct to consumers, and 5,778,000 tons, or 62%, through distributors and pooling schemes.

Consumers of gas numbered 12,875,987, or 83,780 more than at the corresponding date in 1956. Of the total, 12,125,748 were domestic consumers. All Boards but one (Scottish) had an increase in the number of consumers.

The total quantity of gas sold during 1956-57 was 2,607 mill. therms, compared with 2,649 mill. therms in the previous year. Three of the Boards—the Northern, East Midlands and Wales—had increases, each of about 1%; the remaining nine had decreases varying from 1.5 to 3.0%. For the whole industry the decrease was 1.6%.

Of the total sales 50.96% were to domestic consumers, 28.75% to industry, 14.84% to commercial users, and the baance of 5.45% for public administration, public lighting, and the boards' own purposes, including the gas equivalent of the benzole extracted from the gas. The proportions differ very little from the previous year; that taken by industry is slightly higher, and that taken by domestic and commercial consumers slightly lower.

Sales of the main gas appliances on hire purchase terms fell by 14.4% compared with the sales in 1955-56, which were themselves down by more than a third on the sales for 1954-55, during which there was a substantial period of freedom from restraints. Sales for cash also were affected by increased purchase tax, but here the decline was much less, i.e., by 4.5% from 494,530 main gas appliances sold for cash in 1955-56 to 472,444 sold in 1956-57.

Summarising the Boards' Reports

NORTH WESTERN

Surplus—And No Price Increase

A NET operating surplus of £786,804 is reported for its eighth trading year by the North Western, second largest of the boards. This compares with £100,329 for the previous year. It was achieved without raising gas prices although the Board had to meet a £2 mill. addition to costs in respect of coal, wages, salaries, freight and other items and although there were falls in gas sales of just over 2% and in coke sales of almost 7%.

Adjustments of items relating to previous years brought the total surplus for the year to £795,863 and with £415,195 brought forward, the disposable balance was £1,211,058 against £815,195 at the end of the seventh year.

Of this, £100,000 has been placed to reserve fund (against £200,000) and £600,000 to obsolescence reserve (against £200,000) leaving £511,058 to be carried forward.

Sales of gas during the Board's eighth year amounted to 354.4 mill. therms against 362.7 mill. therms in the previous year and the average realised price was 17.88 pence per therm against 17.28 pence per therm.

Sales to domestic consumers were 3.06% less than in 1955-56 and the average consumption for the year per domestic consumer at 99 therms was 3½ therms lower than in 1955-56.

Gas sold to industry, however, increased by 1.41%. Of all gas sold, domestic consumers took 47.6%, industrial consumers 31.5%, commercial consumers 15.3% and public authorities 4%.

Coke sales at 1,519,000 tons were 113,000 tons less than in 1955-56. Of the coke sold, 170,000 tons (50,000 tons more than in 1955-56) were exported to Denmark, Norway, Ireland and Finland. Coke stocks at the year-end amounted to 210,000 tons against 58,000 tons a year previously.

Sales and hire purchase of appliances were £3,088,903 compared with £3,111,252 in the previous year. The number of appliances sold, however, was more than 6% below the relatively low figure recorded for the previous year, and the discriminatory tax on gas-fired space and water heaters in comparison with their tax-exempted oil-fired counterparts are blamed for the setback.

The report shows that operational efficiency rose from 77.25% to 78.05% and that the yield of coal gas (80.04 therms), coke (8.32 cwt.) and tar (15.98 gal.) per ton of coal carbonised, was in each case higher than previously. Productivity per employee further improved by 6½%. At the close of the year the Board had 17,156 employees, a reduction of 1,754 over the previous year's figure.

During the year, further links in the North Western gas grid enabled six further production stations to be closed down. In the eight years since vesting date, uneconomic production plant with a total capacity of 71 mill. cu.ft. a day has been closed down, but available plant capacity is now 52 mill. cu.ft. greater than at vesting date.

During the year the Board's engineers were successful in producing a new smokeless fuel 'Phimax' for use in open fire grates in replacement of coal. The Report says that it has been received with enthusiasm by the public. Extension of its production, however, is entirely dependent on the ability to obtain additional quantities of the right kind of coal. Experiments are being continued to make it possible to produce the new fuel from other coals.

The Board's total income for the year amounted to £47,560,000 against £45,365,000 in the previous year. It was made up of £26,409,000 from the sale of gas, £15,940,000 from the sale of coke and other products, £3,089,000 from the sale of appliances, £1,126,000 on the rentals of appliances and fittings, etc., and £996,000 from hire purchase interest and other chargeable work.

Revenue expenditure totalled £46,773,000 against £45,265,000. It was

made up as to £22,508,000 on production materials (coal, coke and oil), £10,028,000 on wages, salaries, national insurance and superannuation, £2,066,000 on cost of appliances, £4,802,000 on other materials and general expenses, £6,676,000 on depreciation and interest charges, £461,000 on rates and £232,000 on contributions to Gas Council expenses.

The balance-sheet total is shown at £86,869,646 against £86,049,793 a year previously. Fixed assets, less depreciation, are valued at £64,319,472 against £60,534,326. Additions to fixed assets since vesting date less depreciation, are valued at £53,930,241.

Capital liabilities at the year-end totalled £73,742,989 against £71,286,302 and were made up as to £65,690,615 British guaranteed stock, £3,785,000 advances from the Minister of Power, £3,761,833 compensation to local authorities, and £505,541 mortgages and other loans.

Reserves and balance on revenue account totalled £2,798,344 (against £2,002,481) and current liabilities £9,946,870 (against £12,760,920).

NORTH EASTERN

More Efficient Burner Developed

THE North Eastern Board shows a surplus of £310,785 for the year; £200,000 has been placed to the reserve fund with £353,330 carried forward.

During the year, 145,390,649 therms of gas were sold realising an income of £11,459,809; sales of by-products yielded £6,420,689; and appliances £1,314,743.

The average price realised per therm was 18.92d., while the number of consumers rose by 469 to a total of 863,392.

The number of employees was 8,148, 244 less than the previous year; 29 stations have ceased to manufacture gas since May, 1949.

Authorised new capital expenditure on manufacture, distribution, and storage of gas amounted to £1,670,059. Reduction in the fuel expenditure index gave a weighted average for the year of 17.4 as against 19.4 last year.

Wage increases to gas workers represented an additional sum of £120,000 to be found in a full year; agreement was reached on a five-day working week for all manual day-workers except those engaged on main and service laying.

The medical service has been further expanded and visits by medical staff are much appreciated by employees; £63,304 was paid to employees under various sick pay schemes.

A total of 487 employees attended courses at local technical colleges, while 1,372 employees attended various courses, and a further 82 attended miscellaneous lectures.

During the year 139,008,504 therms of gas were manufactured, while the total number of operatives on works decreased from 3,249 in 1953 to 2,894 in 1957.

Coke oven gas supplied to the Board amounted to 21,287,407 therms as against 19,793,540 therms last year, and further consultation has taken place with the National Coal Board on its proposal to build new coke ovens at Grimethorpe.

The quantity of coal purchased was 1,637,200 tons, while increased coal and transport charges were higher by some £500,000 p.a.

Altogether 151 miles of new mains have been laid or re-laid at a cost of £754,588, and the improvement of supplies of gas to districts with deficient distribution systems, together with the replacement of old mains, has continued to receive attention.

Huddersfield is to have new vertical retorts of a capacity of 2½ mill. cu.ft. per day as well as new coke plant, while the further extension of the grid along the Aire Valley to Skipton is to proceed for completion next year; the extension of the grid from Leeds to York will be completed this year.

The Segas catalytic oil cracking plant at York has gasified heavy oil without trouble; trials with light petroleum distillates will be undertaken shortly. New gas purifiers, using pelleted oxide, are under construction at Hull and Scarborough.

Experiments in high rate oil circulation are being undertaken at Spenborough to reduce the organic sulphur content to approximately 10 grains per 100 cu.ft. of gas.

Gas sales to consumers at 142,280,658 therms, were 2.15% less than last year, while hire purchase and credit sale controls, as well as purchase tax, seriously affected appliance sales and their value at £1,314,743 was 3.7% lower than last year.

A gas burner with a greater heat release per cu.ft. of tunnel volume than those generally available was produced, and it is expected that industry will adopt this type of burner.

Some 496,600 tons of coke and 57,300 tons of breeze represented total inland sales, while coke exported rose to the record figure of 102,510 tons compared with 65,480 tons last year.

Under the Rating and Valuation Act 1957 the rates payable will be approximately £360,000 against £196,000 in 1956-57 and £272,000 in 1955-56. Gross income was £19,789,000 of which 57.91% came from the sale of gas, 32.45% from the sale of by-products, and 9.64% from the sale of appliances, rentals of meters and of appliances, hire purchase interest and other chargeable work and miscellaneous income.

Gross expenditure was £19,478,000, of which production materials and purchased gas accounted for 46.32%, payments to and on behalf of employees 23.28%, other materials and services and capital charges 28.82%.

NORTH THAMES

Technical Advances Increase Capacity

A YEAR of technical progress against a background of rising costs, hire purchase restrictions, the Suez crisis, and a warm winter ended for the North Thames Board with a surplus of £259,887. A further sum of £110,560 relating to income in respect of prior years, together with the balance brought forward last year of £242,735, makes a total of £613,182. Of this, £200,000 has been allocated to replacement and obsolescence reserve, and £100,000 to the reserve fund, leaving a carry-forward of £313,182.

More new gas-making plant was completed, and higher output obtained from existing equipment; as a result of these technical advances, the Board's total installed capacity rose from 405.10 mill. cu.ft. per day to 425.50 mill. cu.ft. per day. Efficiency of oil gasification was improved by 1% saving 190,000 gal. of oil in the year.

The Board's new smokeless solid fuel, 'Cleanglow,' has already proved very popular and is particularly suitable for use in smoke-control areas because its characteristic of burning readily makes a special type of grate unnecessary.

Several records were broken by production at the tar and ammonia products works, and revenue from by-products increased considerably over last year. During the Suez crisis the Board were able to help the steel industry by supplying them with 11,000 tons of coal-tar fuel to make good cuts in their normal requirements of imported oil.

An electronic calculating machine was installed, and investigation into the use of large electronic computers was further pursued. A new storekeeping system was initiated at the works so as to keep to a minimum the capital invested in stocks without prejudicing working efficiency.

Gross additions to fixed assets since vesting date amount to £51 mill. and now exceed the pre-vesting fixed assets taken over from former undertakings by some £5 mill. Additions to fixed assets (less disposals) during the year amounted to £8.3 mill., of which the Board has financed approximately £4.3 mill. from its own resources by way of depreciation.

Since vesting day the Board has provided £24 mill. by way of depreciation and amounts set aside for obsolescence towards meeting its renewals and extension of plant and other capital expenditure.

A fifth battery of coke ovens was brought into operation at Beckton; its 7.2 mill. cu.ft. per day of coal gas is an important addition to the highly efficient plant supplying the basic all-the-year-round demand for gas.

The Board successfully intensified its efforts on increasing output from existing plant. For example, alterations to

carburetted water gas sets at Nine Elms and Poplar raised output from 12.3 mill. cu.ft. per day to 16.5 mill. cu.ft., while improved operation on the latest water gas sets at Beckton increased output from 18 mill. cu.ft. per day to 24 mill. cu.ft. per day. The first of the Board's Onia-Gegi plants for the gasification of heavy oil began work at Fulham, raising the Board's installed capacity by 4 mill. cu.ft. per day.

The effect of these improvements and additions (after scrapping obsolete plant) was to raise the installed capacity of coal gas plant from 233.35 mill. cu.ft. per day to 240.55 mill. cu.ft. per day, and the availability of other gas from 171.75 mill. cu.ft. per day to 184.95 mill. cu.ft. The Board's total installed capacity was thus enlarged from 405.10 mill. cu.ft. per day to 425.50 mill. cu.ft. per day.

Work on new projects was pushed on. An example is the construction of the plant at Romford to transform refinery gas from Shell Haven into gas of 500 B.Th.U., which is well up to schedule.

The Board energetically continued development work on the interesting possibilities of importing methane gas refrigerated into a liquid; the Board's engineers helped in trials in the United States on tank design, held to obtain data for the design of a ship to carry refrigerated methane.

Work on the improvement of coal handling and river traffic facilities at Beckton was pushed on. By the end of March, 1957, some 80% of a new river wall was finished and a start made on the extension of the down-river arm of the pier to increase the efficiency of coal handling at Beckton.

Much progress was made with the conversion of isolated gasholder and pumping stations to remote control and automatic operation.

The Board laid 146 miles of new main to serve new consumers. A notable event was the forging of the last link in the grid connecting all the gas-making stations by the completion of a high pressure pipeline between Wooburn and High Wycombe works. This main is welded steel, 18-in. diameter, and tested to 400 lb. per sq. in.

In the programme of building gasholders to meet varying demands for gas, the holders at Grays and Rayleigh, of 1 m. cu.ft. and 0.5m. cu.ft. were completed. At the end of the year work was going on, either in design or on site, on 12 holders, while two holders are under reconstruction at Fulham and Southall to enlarge their capacity.

Sales of gas to the public were 1.83% lower than the record total of the previous year, a total of 1,883,871 consumers purchasing 389,302,565 therms. The total number of consumers increased by 9,896.

Appliance sales continued to be badly hit; specially affected were refrigerators, space heaters and gas/electric washing machines which also carry high purchase tax.

Over 2,400 industrial appliances were installed in the year, with a potential consumption of more than 5 mill. therms a year.

EASTERN

New Gas-making Methods Adopted

A NET surplus of £19,553 after providing £1,249,508 for depreciation, £1,141,932 for interest, £50,000 for obsolescence, £50,000 for future taxation and transferring £50,000 to the general reserve fund was shown by the Eastern Area Board. During the year £4,080,000 was authorised by the Board to be spent on the extension and renewal of manufacturing works, plant and mains, in accordance with the capital development programme approved by the Minister on April 6, 1956.

Sales of gas to the five new towns in the Board's Area increased by more than 20% during the year.

The Board installed gas-making plant capable of producing over 4 mill. cu.ft. of gas per day and shut down plant of almost equal capacity. Six works were closed during the year, bulk supplies being afforded from other works. The number of manufacturing works at the end of the year were 64, compared with 92 at vesting date.

Plant for the complete gasification of low-grade coal is now in regular operation at Watford, while catalytic oil gasification plant was completed during the year at Ponders End. Two more oil gasification plants are under construction and a further three are on order.

Nearly seven miles of distribution mains were re-laid during the year, and 239 miles of new mains were laid.

Among the Board's integration schemes, the connection of Essex and Suffolk grids was completed, and there is now a continuous main from Chelmsford in Essex to Aldeburgh in Suffolk, a distance of 69 miles. All consumers on this system are now supplied from Ipswich, Colchester and Chelmsford.

Further progress was made with integration in the other four Divisions (Cambridge, Norwich, Tottenham, and Watford). All works in the Tottenham Division are now interconnected.

A record number of 25,765 services were laid, while 10,831 were re-laid.

Gas made decreased by 1.9% owing to the mild winter. Increased coal gas production was effected to save oil in the production of water gas on account of the Middle East crisis. Despite this, coal stocks remained level from mid-January to the end of March, 1957, at which date they were 19,000 tons higher than a year previously.

Unaccounted-for gas at 6.39% compared with 6.14% for 1955-56 and 6.39% for 1954-55. Twenty miles of underground pipe were surveyed by a Dutch firm specialising in leakage detection, and the Board plans to set up a leakage research unit.

The Board is the statutory water undertaker in the Borough of Dunstable and its environs, and 1 mill. gal. of water a day are now being taken from the Friars Wash borehole, near Flamstead, Hertfordshire, under a scheme developed in conjunction with the Luton Water Company. The two undertakings have also applied for permission to build a pumping station at Shafford Farm, near Markyate, Hertfordshire.

Sales of gas to the public fell by 1.75% owing to the mild winter, but consumers increased by 14,830. The price of gas was reduced in two districts.

A record quantity of 743,476 tons of coke was produced for sale to the public, but sales were down on the previous year by nearly 57,000 tons, also owing to the mild winter.

A total of 107,985 domestic appliances were sold during the year, an increase of 3,255 over the previous year, but there was a decline of 9% in sales of major domestic appliances. Sales are still hit by credit restrictions.

The total number of rental cookers scrapped as obsolete since vesting date was 130,760, approximately 85% of such cookers taken over at that date.

During the year the Board exhibited at 31 shows, including the Royal Norfolk Show and the British Food Fair.

The number of employees at March 31, 1957, was 9,036, as compared with 9,055 a year previously. Equal pay for equal work for female employees is being introduced by stages over the period April 1, 1956, to January 1, 1961.

No time was lost owing to trade disputes during the year, while 536 employees attended courses approved by the Board, including part-time day and evening courses; more than 900 employees trained at the Board's own training centres.

The Board is supporting the attendance of selected pupils at sandwich courses in civil engineering at Enfield and Westminster Technical Colleges. Foremen's courses in supervisory training at Hendon Technical College came to an end in December, 1956, after 260 foremen had attended. A similar course for office supervisors, started in June, 1956, had already been attended by 101 officers at the end of the financial year.

Selected officers underwent courses in management training arranged by the Gas Council at the Brooklands Technical College, Weybridge.

Application of the provisions of the Rating and Valuation (Miscellaneous Provisions) Act, 1955, has not altered to any great extent the total rateable value of the Board, but owing to other provisions of the Act there was a considerable fall in rates in the pound. Under the Rating and Valuation Act, 1957, however, the Board will have to pay approximately 93% more rates than in 1956-57 (35% more than in 1955-56).

Capital development during the year amounted to £3,495,356, bringing the total since vesting date to £19,685,101, of which £9,721,000 was financed out of the Board's own resources or by amounts deposited with the Board by trustees of employees' pensions schemes.

SCOTTISH

Simplified Admin. Structure

THE Scottish Board report shows a surplus of £370,253. The Board's gross income of £29,861,645 represents an increase on the previous year of £2,720,099, of which gas sales contributed £1,744,192. This increase arises from additions to the price of gas which, together with additional revenue from former increases, raised the average price realised for gas by 2.4 pence per therm.

The Board's gross expenditure increased by £2,029,264, of which the higher costs of coal and other production materials accounted for £1,248,225. The surplus on the year's trading of £370,253 as against a deficit of £320,582 for the previous year, represents an improvement of £690,835.

In order to meet the need of changed conditions and the requirements of the area, the Board have given detailed consideration to the reorganisation of the administrative structure. Towards the end of the year a new structure of administration was introduced designed to operate in larger units, and based mainly on the functional form of organisation. Instead of ten divisions and groups in the area, as formerly, there are now only four divisions. These are Glasgow and Western, Edinburgh and South-Eastern, Central, and Northern. Each of the divisions is under the control of a general manager, who is assisted by specialist officers in charge of the four main functions of production, distribution, service and sales, and finance and administration.

At the larger undertakings within the divisions corresponding officers are in charge of the four functions; but at the smaller undertakings the manager continues to be in charge of all functions.

An area maintenance and construction department has been established under the control of a General Manager. It will operate on a competitive-tender basis for construction and maintenance work to be undertaken at the smaller isolated undertakings throughout the area.

The consumer service section in the Edinburgh district of the Edinburgh and South-Eastern Division has been reorganised. The mobility of gasfitters and maintenance men has been increased by the provision of vans equipped with radio telephones. A Progress Centre has been created to control progress of all work in hand for consumers, and a planning group has been established to coordinate stores, transport and deployment of personnel.

The yield of gas increased by 0.4 of a therm from 75.0 therms (the corrected figure for 1955-56) to 75.4 therms per ton of coal carbonised. Overall thermal efficiency of gas production has improved from 72.82% in 1955-56 to 73.63% in 1956-57.

Special attention was directed to fuel conservation and, as a result, the use of coal, coke and breeze for steam-raising and other works purposes was reduced and savings from this source alone amounted to £137,000 for the year.

Important new installations of gas-making plant came into operation during the year at Provan works, Glasgow; at Dumfries; and Kilmarnock. Good progress has been made on a number of projects which will add considerably to the assets of the Board. These include new continuous-vertical-retort installations at Provan works, Glasgow, with a daily capacity of 6.5 mill. cu.ft., and a similar installation at Aberdeen with a daily capacity of 2.5 mill. cu.ft.

During the year arrangements were made through the Gas Council to take supplies of natural gas from a well at Cousland, near Dalkeith. Two major integration schemes have been planned. One, the West of Scotland Grid, will serve Glasgow, Renfrewshire, and substantial areas of Lanarkshire and Ayrshire. The other, the East of Scotland Grid, will serve the counties of Fife, Kinross, Angus and part of Kincardineshire. Progress made on grid systems and interlinkage mains enabled eleven uneconomic manufacturing stations to be closed down consequent upon their receiving bulk supplies of gas from more efficient undertakings. Over 140 miles of new mains were laid during the year; the number of new services laid amounted to 18,478.

The total number of persons in the employment of the Board at March 31, was 10,443. There was a decrease of 1.7% in the average numbers employed in 1956-57 compared with 1955-56. The rapid expansion of the Board's consumer service has intensified the long-standing need for additional gasfitters; but there was a welcome recruitment of 55 apprentices during the year.

The year was not completely free from industrial strife. There was a demand by maintenance craftsmen and plumbers employed as gasfitters in Dundee, Aberdeen and Glasgow for a five-day week which the Board felt unable fully to concede. The disputes resulted in the loss of 5,427 man-days. By the end of the year, however, five-day-week working had been agreed on a restricted basis for operatives in 18 of the Board's undertakings. Two additional joint consultative committees were established during the year, bringing the total number to 30 within the area.

There was a welcome reduction of 12.9% in the number of working days lost from certified sickness absence, which decreased from 127,886 in 1955-56 to 111,371 in 1956-57. The cost to the Board was £111,932.

The amount of coal used for gas-making during the year was 2,367,500 tons; a reduction of 2% compared with the previous year. Steps taken to reduce transport costs by re-allocating deliveries resulted in a saving estimated at £45,000.

The amount of coke produced during the year was 1,283,000 tons compared with 1,304,000 tons for the previous year; a decrease of 1.6%. Two increases in price were approved by the Ministry of Power.

Over the year stocks of breeze were increased by 2,000 tons; 295,000 tons of breeze were produced. Tar produced amounted to 190,000 tons of which 29% was distilled at plants owned by the Board, and the balance disposed of through a co-operative tar scheme or sold to private distillers under existing agreements.

Production of motor benzole increased to 45,000 gal. compared with 26,000 gal. for the previous year.

Results achieved by Scottish farmers using crude ammoniacal liquor as a fertiliser for grassland over the past three years have led to a further expansion in the use of this material during 1956-57. The total quantity supplied during the 1956 season to agricultural contractors was 630,000 gal., an increase of 50% compared with the previous year.

WALES

Appliance Sales Show Increase

THE value of appliances sold by the Wales Gas Board rose from £965,370 in 1955-56 to £988,037. This is equivalent to £208 per 100 consumers (£207 in the previous year). In view of the continuing restrictions and the level of purchase tax, the Board states it considers this to be not unsatisfactory compared with previous years.

Of the 83,747,553 therms sold by the Board, 27.9% was to industrial consumers, or 23,30,990 therms, an increase in this class of sales of 5.2%.

On the other hand sales to commercial consumers decreased by 2.6%, from 15,034,213 to 14,637,661 therms.

Sales to commercial consumers fell from 42,585,456 therms to 42,370,836. The number of consumers in this class rose from 435,577 to 474,228, 3,159 of these being added by the transfer of the Ebbw Vale undertaking to the Board in November, 1956.

During the year 77,597,846 therms of coke-oven gas were purchased. This is an increase of 15.9% on the previous year. The Board acknowledges the difficulties placed on coke oven operators by the Suez crisis and places on record its appreciation of their achievement throughout in supplying their contract quantities to the Board.

The 1.3% increase in the amount of gas sent out (94.46 mill. therms) would have been greater but for the abnormally mild months of January, February and March, which was demonstrated by a 3.4% increase up to December 31, 1956, over the equivalent nine months in the previous year.

Coal carbonised fell from 316,761 to 218,649 tons; 212,721 tons were pur-

chased, 95,187 tons less than the previous year. The substantial reduction is said to reflect the full benefit of the extensions of the North and South Wales grids carried out in the previous year. The consumption of gas oil to make water gas fell by 70%—largely a consequence of Government policy to use less oil during the Suez crisis and also to the reduction in water gas made as a result of the mild winter.

Gas manufacture ceased at Rhyl, Llangefni, Amlwch, Carmarthen, Haverfordwest and Tenby when these undertakings received a supply of gas from the grid systems.

Development continued at the Aberavon works of the Port Talbot undertaking. Its compression capacity was increased by 100% to 36 mill. cu.ft. per day and its purification capacity by a further 5 mill. cu.ft. per day. A liquid petroleum storage and gas plant of 100 tons capacity was authorised for installation at this works and at Cardiff where the first half of a Gastechnik purification plant (rated capacity 8 mill. cu.ft. per day) was completed. Further progress was made at Pontypool and Wrexham with the installation of plant to deal with trade effluent.

The supply of methane from Point of Ayr colliery began on April 16, 1956. A steady supply, though as yet less than anticipated, was received throughout the year. Further supplies of methane from collieries of the National Coal Board will commence in 1957; preparatory work is well advanced; there will be a supply of 5 mill cu.ft per week of gas from Bersham colliery to the Maelor gasworks, Wrexham, and 14 mill. cu.ft. per week from three collieries in the Afan Valley to the Aberavon works, Port Talbot. These are the minimum quantities anticipated. Discussions are taking place for still further supplies in North and South Wales.

The western section of the South Wales grid was extended west from Llanelly 69.1 miles to Carmarthen, Haverfordwest, Tenby, Milford Haven and Neyland and Pembroke district undertakings. Using pipelining techniques the average length of main laid per week was 4½ miles and the greatest length was six miles. The Anglesey section of the North Wales grid was extended to Llangefni and Amlwch.

The total number of persons employed was almost the same a 4,305 (4,337); but within the total, the numbers engaged on the manufacture of gas decreased and the numbers engaged on the distribution and sale of gas increased. There was an increase in the price of gas of an average of approximately 1½d. per therm from July 1, 1956.

The gross revenue £9,067,000 exceeded expenditure £8,946,000. This latter figure included interest and allied payments amounting to £688,978 and depreciation and amounts written off amounting to £729,801. The excess of total revenue over total expenditure amounted to £120,628. From this figure £75,000 was set aside for replacement and obsolescence reserve and £45,000 to reserve fund.

NORTHERN

Industry Takes Nearly Half

THE Northern Board's sales of gas increased by 1.07%. Total quantity of gas sold amounted to 166,479,806 therms, including 28,602 therms sold to the Scottish Gas Board. The report says: 'Larger increases in the industrial and commercial sections of the Board's business were partially offset by the effects of an exceptionally mild winter upon domestic space heating consumption which resulted in the increase for domestic gas sales being somewhat less than the overall figure.

Since the year 1950-51 to date, the quantity of gas sold for industrial and commercial purposes has increased by 40.75% and now at 82,800,000 therms represents almost half of the Board's output. In this constantly expanding field of gas usage, great technical improvement has been achieved and new techniques developed to meet the changing needs of industry.

On the Tyne, Wear and Tees large quantities of gas are being used in new engineering requirements arising out of the rapid expansion in the fields of nuclear energy, electronics and chemicals.

From meter readings following May 29, 1956, each of the three zonal prices was raised by 2d. per therm.

The number of cookers sold fell from 29,700 to 26,026, that is by 12.3%, while sales of all appliances totalled 58,426 compared with 68,968 in the previous year, a reduction of 15.3%.

Income from the sale of gas amounted to £10,729,576 and from products (less direct charges) to £2,834,330. The revenue accrued at March 31, 1957, in respect of unread gas was £1,403,884, an increase of £155,856 over the opening figure for the year. The amount of the increase has been brought into the accounts.

Due provision has been made for depreciation and for the redemption of local authority loans in respect of vested assets, as well as for contribution towards British Gas Stock Redemption Funds. New service pipes laid and short-lived or mobile assets acquired during the year have been written off to revenue at a cost of £161,669. The surplus for the year, after making the above-mentioned provisions, and taking into account interest and other charges, amounts to £595,704 equal to 0.86 pence per therm of gas sold.

After bringing into account adjustments relating to prior years (£6,310) and the credit balance on revenue account at the commencement of the year (£263,379) the accumulated surplus is £865,393. During the year £250,000 has been placed to reserve fund, £300,000 to replacement and obsolescence reserve and £46,000 to reserve for future taxation leaving a credit balance carried forward of £269,393.

During the year 13,051 houses were completed in the area within reasonable reach of a gas supply of which 12,144 (93%) were equipped with gas services.

At the end of the year there were 40,841 public lamps connected to the Board's supply mains. The total consumption of gas under this head amounted to 3,301,998 therms, or 1.98% of all gas sold.

Coal received at gasworks during the year amounted to 868,807 tons, and 8,896 tons of gas oil and 412 tons of heavy petroleum oil were consumed. The consumption of gas oil in the previous year was 22,586 tons.

Gross production of coke was 520,667 tons, compared with 571,646 tons in the previous year. Of the 96,594 tons of coke breeze produced 66,280 tons were consumed at the Board's own works; 15,008 tons were sold to local consumers and 18,499 tons were exported.

The production of crude coal tar during the year totalled 53,403 tons compared with 56,101 tons in the previous year.

SOUTH WESTERN

Industrial Sales Continue to Grow

AFTER meeting all current expenditure, including proper depreciation and interest on borrowed money, the South Western Board showed a surplus of £13,008 during the year. Additional income relating to prior years also became available and after transferring £120,000 to obsolescence reserve and £25,000 to reserve fund the accumulated amount of profit carried forward to next year was some £50,000 less, at £70,948.

At vesting date the Board inherited 108 manufacturing stations of widely varying efficiency. This number was reduced by March 31, 1957, to 36; by 1965 it is anticipated that it will have been cut to 16.

At Gloucester good progress has been made in the installation of plant for four distinct processes. Three of these are for the manufacture of gas from oil, and one for the complete gasification of coal. This planned development of the Gloucester works will, it is hoped, provide information on which to formulate the Board's future policy regarding gas manufacture, including the economical balancing of peak load demands for gas and coke, bulk transmission, and the mixing of gases of widely varying characteristics to produce a normal town gas.

The year under review has also seen the commissioning of an entirely new works of 2 mill. cu.ft. per day capacity at Newham near Truro in Cornwall,

which will, in conjunction with the works at Newquay and Penzance, supply the bulk of Cornwall's gas requirements.

The reconstruction of the Exeter works was completed during the year, and the new 6 mill. cu.ft. per day continuous vertical retort installation, together with ancillary plant, was brought into operation in two stages, the first half in June and the remainder in December, 1956.

A central control of production will shortly be established at Bath to plan and manage the day-to-day production of gas throughout the whole area, and ensure that the requisite supplies of gas are forthcoming from the most economical sources capable of meeting the demand.

Much thought has been given to the framing of gas tariffs in order to offer the maximum promotional appeal, consistent with a charge reasonably representative of the cost of supply. From the multiplicity of tariffs taken over at vesting date the Board's current domestic tariffs, which date from July, 1956, have a common running rate throughout the whole area available to both ordinary and prepayment consumers alike.

Appropriate and attractive tariffs are also in force for non-domestic consumers. The 'constant demand' tariffs have been welcomed by industry, and the Board attributes a large part of the increase in the sales of gas to industry to their introduction.

The exceptionally mild winter, some recession in industrial activity, the engineering strike in the latter part of the year, and the fact that 1956-57 contained one day less than 1955-56, all had an adverse effect on the sale of gas, which fell from 112,899,557 therms in 1955-56 to 109,593,418 therms in 1956-57.

The demand for gas for industrial and commercial purposes continues to play a part of increasing importance in the Board's business. Gas fired furnaces of special design have been supplied and development work on both new furnace designs and gas fired air heaters continues. It has been decided to erect an industrial showroom and development centre at Bristol. The possibility of providing a heat treatment centre to be available for any industrialist whose production requirements include heat treatment is also being investigated.

During the eight years to March 31, 1957, a total of 743,209 appliances have been installed. This is equivalent to more than one appliance per consumer, and more than half the total number of the Board's gas consumers have, since vesting date, been supplied with new cookers.

Far-reaching in scope and conception are the Board's plans for dealing with its accountancy requirements. These have been based on the need to provide management at all levels and at all times with uniform and up-to-date information and so to locate the processing of the figures that the fullest use can be made of modern electronic accounting machines.

The attractive savings and advantages of central large-scale mechanisation cannot, however, be secured without painstaking and detailed consideration of the extensive staff dislocations which it entails. The Board has been particularly attentive to this aspect of the scheme, and considerable time and care has been devoted to the selection of appropriate staff to man the centralised offices, and to ensuring that all transfers and redundancies are effected in the most equitable and considerate manner.

As in previous years, the Board has continued to lay great stress on the maintenance of good human relationships throughout its organisation, more especially in view of the dislocations inseparable from technical and administrative integration over so large an area.

The Board has continued to sponsor arrangements for further education and training, and some 369 of its employees have this year been given grants in respect of tuition and examination fees, while a further 150 employees have attended courses on varying specialist subjects.

The total number of employees has been reduced by 374 since March 31, 1956, and by 936 since vesting date.

The reduction in the number of manual and intermediate grade employees is principally attributable to the progress of integration, and reductions in the consumer service staff arising from reorganisation will be appreciably augmented by reductions in the clerical staff as the plans for accountancy centralisation and mechanisation reach fruition. The utmost care has been taken to ease the transitional period for the staff, and redundancy has been minimised by turning natural wastage to full account and filling short term vacancies on a temporary basis.

EAST MIDLANDS

Technical Efficiency Improved

WHILE it was again a year in which trading conditions were difficult for the East Midlands Board, labour relations remained good, greater use has been made of the machinery for joint consultation, and improvements were achieved in technical efficiency, particularly in the production of gas and coke. The year ended with a surplus of £366,772 after providing £1,974,274 for depreciation and £1,618,941 for interest charges.

More than 64 mill. cu.ft. of gas was made or purchased by the Board, of which more than half was purchased in bulk from coke ovens and purified for re-sale, while 1,629,713 tons of coal and just over 5 mill. gal. of oil were used in manufacturing gas in the Board's own plant.

Total consumers numbered 1,193,479 at the end of the year, an increase of 15,558 from the previous March, while total gas sales to domestic customers was almost identical with those last year, sales to industry, however, increasing by over 3%.

Owing largely to the commissioning of new plant in the Sheffield and Rotherham Division, the thermal yield of gas per ton of coal carbonised has this year increased from 73.4 therms to 74.4. The yield of coke and breeze made has increased from 11.22 cwt. per ton of coal carbonised to 11.37 cwts.

The first section of the new installation of horizontal chambers was brought into commission at Neepsend works, Sheffield, in February, 1957. Work is proceeding on the second section for completion during the immediate future and the site is being prepared for the third section. The plant when complete will have a daily capacity of about 10 mill. cu.ft.

Work continues on the extension to the intermittent vertical chamber plant at Car House works, Rotherham, for completion during the current year. The daily capacity of this extension will be about 4 mill. cu.ft.

During the year the construction of two catalytic oil gas plants began; one with a nominal daily capacity of 10 mill. cu.ft. at Meadow Hall works, Sheffield, and one at Northampton with a capacity of 6 mill. cu.ft. Both installations are expected to be put to work before the end of 1957.

Five works were closed during the year. New gasholders were completed at Litchurch works, Derby, and Neepsend works, Sheffield, with capacities of 6 and 5 mill. cu.ft. respectively. Two new gasholders, one at Retford with a capacity of .5 mill. cu.ft., and one at Misterton with a capacity of 50,000 cu.ft., are under construction.

The second battery of ovens at the Avenue plant of the East Midlands Division of the National Coal Board commenced to deliver gas into the Board's grid system on November 7, 1956. Additional gas from extensions at the Manvers plant of the North-Eastern Division of the National Coal Board was received into the Board's grid system on November 27, 1956, and the supply from this source was gradually built up until February, 1957, when the plant was sending 19.5 mill. cu.ft. per day, representing an increase of about 13.3 mill. cu.ft. per day.

It was proposed to provide a further large oil gas plant to meet the increasing demand for gas in the Sheffield and Rotherham Division but notification has since been received of possible additional supplies of coke oven gas in 1961; a final decision on this oil gas plant must, therefore, await clarification of the coke oven gas position. To make provision, however for the intervening years, a smaller oil gas plant is being installed at the Dinnington works with a nominal daily capacity of 4 mill. cu.ft. A gasholder with a capacity of 2 mill. cu.ft. will also be provided.

To provide additional gas and much

needed flexibility in the inter-connected Divisions of Notts. and Derby and Leicester and Northants., an oil gas plant with a nominal daily capacity of 10 mill. cu.ft. is being installed at Aylestone Road works, Leicester.

The completion of the final link of the 'backbone' main between Sheffield and Chesterfield is intimately associated with the proposed additional coke oven gas supplies, and is still, therefore, under active consideration.

There were 10,868 persons in the Board's employment at the close of the year compared with an opening strength of 11,112 on April 1, 1956. This is the fourth successive year in which there has been a reduction in the total numbers employed.

At present, 753 employees are studying under the Board's education scheme. The Board have under training 42 pupil gas engineers and 427 apprentice gas fitters. During the past year there was a further improvement in the results of the City and Guilds Examinations for Gas Fitters, while 712 employees attended courses at the Board's training centre at Long Eaton, compared with 334 the previous year.

Management training and planning for management succession have occupied much attention. Short residential management information courses have again been held in Leicester. Younger men recruited both from existing staff and from the universities are selected each year as management trainees.

The increase in the sale of gas to industrial consumers continued and although single loads of the magnitude of 600,000 therms per annum have been added there is also an encouraging increase in the use of gas by the smaller industrial concerns.

Sales of coke into all markets during the summer of 1956 were 24,025 tons below those for the previous summer. There was a further decline in the winter due to the exceptionally mild weather, so that over the year disposals were 48,892 tons below those in 1955-56. A record quantity of coke, amounting to 45,072 tons, was supplied to foreign markets.

Over 25 mill. gal. of tar were produced during the year, a reduction of 4.7% on last year's total, while 224,885 gal. of crude benzole were produced—an increase of 8.1% on last year's figures.

Sales of concentrated crude ammonia solution to farmers as fertiliser amounted to 1,528,000 gal. This was more than three times last year's figure of sales for this purpose.

WEST MIDLANDS

Gas Yield Per Ton of Coal Raised

AFTER providing for all outgoings chargeable to revenue, the West Midlands Board had a net surplus of £450,399, which represented 1.2% of total income, compared with a surplus of £171,355 for the previous year.

The average price of gas sold rose by 1.26d. per therm, from 16.19d. to 17.45d. per therm, due to the increased tariffs introduced in September, 1956. The average price was the third lowest in the country, being 1.67d. per therm below the national average.

Gas sales totalled 317 mill. therms or 2.9% less than the previous year. Sales to industry accounted for 50.1% of the total output. Consumers increased by 13,955 to 1,113,737.

Sales of appliances continued to be adversely affected by the hire purchase restrictions and increases in purchase tax introduced during the previous year. The total value of sales was £2,218,783 which was 5.9% under the previous year and 22.8% below the record sales of 1954-55.

Sales of coke fell by 10.5% to 1,114,570 tons.

The yield of coal gas per ton of coal rose to 82 therms. The figure in 1949-50 was 77.9 therms per ton and the increased yield of 4.1 therms in the interim represented a gross saving during 1956-57 compared with 1949-50 of 173,000 tons of coal or £900,000. A further sum of £80,000 was saved by economies in power and steam raising on works.

New plant completed during the year increased the daily gas-making capacity in the Area by 6,998,000 cu.ft., after allowing for plant closed down and scrapped. The total increase since vesting date amounts to 96,888,000 cu.ft. per day, equal to 38.5% of the capacity installed at May 1, 1949.

The Board's capital allocation for 1957-58 was limited to £5,400,000. The plans of a project are well advanced whereby mains will be laid between the collieries at Wolstanton and Holditch in North Staffordshire and Stoke-on-Trent gasworks for the transmission of methane gas which the Board will purchase from the National Coal Board.

The erection near Birmingham of the urgently needed large Lurgi complete gasification plant to consume low-grade coal from the Midlands coalfields was still held up owing to dispute over planning permission.

A second installation of continuous vertical retorts of a nominal capacity of 6 mill. cu.ft. per day was brought into commission at Pleck works, Walsall. New carburetted water gas plants were completed at Nechells works, Birmingham (5½ mill. cu.ft. per day) and at Kidderminster (1 mill. cu.ft. per day).

Satisfactory progress was made with the planned integration of the Area. A main from James Bridge to Willenhall and Bilston was brought into commission, forming a connection between Wolverhampton and District and Walsall and District Divisions. A large trunk main was completed between Swan Village works, Birmingham, and the James Bridge distribution station by means of which gas can be transferred from the reconstructed and enlarged Walsall works to the Birmingham and District Division.

SOUTHERN

Fawley Gas Will Save Coal

THE various functions of the Southern Board have been centralised during the year since it had become apparent that changing conditions necessitated a greater degree of uniformity than was possible under the former divisional organisation.

The net surplus for the year was £180,019. After adjustments relating to earlier years there was a disposable surplus of £231,379. Of this, £100,000 was transferred to the replacement and obsolescence reserve and £40,000 to the taxation equalisation reserve, leaving a balance of £91,379 to be carried forward to next year's accounts.

Capital expenditure during the year was £3,119,000, of which 40% was financed from internal sources by means of depreciation and reserves. Additions to fixed assets since nationalisation total £17,690,000.

In July, 1956, a ten-year contract with the Esso Petroleum Co. Ltd. was signed for the purchase of 50,000 therms (about 5 mill. cu.ft.) a day of refinery gas from the Esso Company's Fawley refinery. The first supplies were received into the Board's Southampton works in July, 1957. The use of refinery gas is expected to save 115,000 tons of coal a year, with some savings in gas, oil and heavy oil.

Coal carbonised during the year totalled 1,354,354 tons, being a decrease of 1.5% on the previous year. The yield of coal gas per ton increased by 0.4 therms per ton compared with the previous year. At the end of the year stocks were 29,000 tons higher than at the corresponding date in 1956. Imported tonnage, mostly from Belgium but a small quantity from America, represented 14.8% of all the coal received compared with 17.7% in 1955-56. The net effect of price changes was to add £428,000 to the annual coal bill. Costs of transport by sea, rail, and road also increased.

Gas made during the year decreased by 3,761,700 therms, or 3%. The proportion of coal gas to the total increased by 1% to 81% and water gas declined proportionately.

A scheme for a complete grid system covering the whole area was prepared and as a first step decisions were made to link Southampton to Portsmouth and Bournemouth and to lay a 'backbone main' from Southampton to link with a trunk main from Reading to Cowley. The year's mainlaying programme allowed six small manufacturing stations to cease production. A start was made on an integration scheme in the North Dorset area and in the Isle of Wight in connection with the new Kingston works. In readiness for the reception of refinery gas a start was made on mains from Fawley to Southampton and from

Southampton to Portsmouth. In all, 165 miles of main were laid during the year making the total length of mains in use 5,465 miles with an average of 112 consumers per mile of main, compared with 115 at March 31, 1956.

Designs for automatic equipment and governor house construction have been standardised in order to facilitate the economic and efficient control of remote holder stations by automatic methods.

Total sales of gas for the year were 113,897,952 therms, being a reduction of 1,896,880 therms or 1.6% on the previous year. Sales to domestic customers were 0.6% lower, sales to commercial customers were reduced by just under 6%, but sales to industrial customers increased by nearly 7%. Although this industrial business continued to increase, it represented only 11% of total sales of gas. Domestic and commercial consumptions together made up 82% of total sales and were affected by the abnormally mild weather during the winter. The number of customers served increased by just over 1% to a total of 613,736.

Because of additional costs of about £1,132,000 a year placed on the Board by June 1, 1956, a new tariff came into operation on August 4, 1956. It meant an average increase over the area as a whole of 1½d. per therm which would bring in some £600,000 in a full year, leaving the balance to be absorbed by increased economy and efficiency.

Total number of appliances sold dropped by just over 14%, sales on hire purchase terms declining by 17.9% and sales on credit sale terms by 11.8%. All types of appliances shared in these reductions in varying degrees and the average number of appliances sold per thousand customers fell from the 1955-56 figure of 138 to 118.

The mild weather affected demand for both gas and solid fuel. Production of coke available for sale totalled 523,800 tons compared with 544,100 tons the previous year. Sales of the Board's own coke declined from 53,000 tons to 491,800 tons. Stocks held at gasworks at the end of the year were unduly high being just over 50,100 tons as compared with 8,400 tons at the end of March, 1956. Graded coke was generally short throughout the year, and 59,800 tons were imported from other gas boards, making total sales in the Board's area 551,600 tons, compared with 604,000 tons in the previous year. Coke breeze exports increased from 9,000 tons to 20,000 tons, and were of assistance in disposing of breeze produced, total sales being 66,700 tons as compared with 67,900 in the year 1955-56.

Colonial Gas Holdings

Net profit of £174,579 was made in the year ended June 30, 1957, by Colonial Gas Holdings Ltd., the annual report reveals. Final dividends declared are 3% on preferred stock (making 6% for the year) and 4% on ordinary stock (making 8% for the year) and absorbing £84,000. Carry forward is £33,440.

Profit Up £40,000

Net profit of the South Australian Gas Company rose from £54,266 in 1956 to £94,628 in 1957, the annual report shows. Dividend for the year is unchanged at 6% absorbing £29,294; while £65,334 is transferred to the profit and loss appropriation account, against £34,340 in 1956.

Name Changed

The name of Costain-John Brown Ltd., a wholly-owned subsidiary of John Brown & Co., Ltd., has been changed to Constructors John Brown Ltd.

SOUTH EASTERN

88% of New Tenants Chose Gas

THE South Eastern Board's working showed a surplus of £234,560 on a turn-over of £50,517,607. This makes a cumulative surplus since nationalisation of £1,721,308. In marked contrast with the previous year, the winter was one of the mildest on record and although gas sales increased by 1.2% in the first nine months, sales for the whole year dropped by 2.4%.

The price of gas was held at the 1955 level throughout the year despite increases in the cost of coal, oil, freight and wages.

Of the 26,153 new houses and flats provided with a gas supply during the year, 88% chose gas for their cooking. The number of consumers supplied rose during the year by 14,151 to 1,563,748.

The total value of appliances sold was £4,493,189, representing a slightly lower level of sales than the year before. Some 72,000 cookers were sold compared with 77,000 the previous year, and 28,000 water heaters compared with 30,000. However, sales of gas fires again showed a modest increase which would have been larger but for the exceptionally mild winter.

The new showroom at Crawley New Town, which was opened in September, 1956, occupies a corner site in the rapidly growing town centre and has excellent display facilities.

The total production of gas amounted to 301,861,594 therms during the year, compared with 311,516,011 therms in 1955-56. The shortage of oil supplies owing to the Suez crisis was met by using more coal carbonising plant and by the extended use of coke for making water gas. With this and the mild winter an actual saving of over 5 mill. gall. of oil was effected.

Further extension of the East Greenwich gasworks is nearing completion and this will bring the production capacity there up to 81 mill. cu.ft. of gas a day. At Wandsworth gasworks an additional carburetted water gas plant with a daily capacity of 4½ mill. cu.ft. is being erected. Construction of the new Dover gasworks is well advanced and a carburetted water gas plant of 4.4 mill. cu.ft. daily capacity was brought into use during the year.

Contracts have been placed for most of the production plant units for the first stage of development of the new gas-from-oil works at Isle of Grain, and good progress was made with the foundation work. Erection of a 2 mill. cu.ft. gasholder was begun on January 1, and gas mains are being laid to link the isle of Grain with North Kent and South London.

As a result of continued progress with the integration of gas supplies throughout the Board's area, gasworks at Deal, Folkestone, Hassocks, Burgess Hill, Haywards Heath, Dorking, Godalming and Cranleigh have been closed during the year. Of the 67 manufacturing stations taken over at vesting date, 28 have now been closed down. Re-organisation in the Board's engineering department has put gas production and distribution throughout South London under central control.

During the year, 192 miles of additional mains were laid, making the total length of gas mains now in use 10,284 miles.

During the year, 3,846,047 tons of coal were delivered to the Board. Less than 3% came from abroad, compared with 11% in the previous year. The delivered cost of coal showed an average increase of just over 10%.

In December, 1956, a new up-river collier, the m.v. Kingston, was commissioned and is now operating. Four more similar ships have been ordered. The Board's lighterage section has been closed in order to reduce transport costs and three tugs and 70 barges have been sold.

As a result of the mild winter, less coke than in the previous year was sold at home. On the other hand, exports of coke increased. Total sales were 1,556,845 tons compared with 1,644,414 tons. Exports amounted to 128,582 tons. Arrangements have been made to ensure adequate supplies of coke to areas formerly supplied by those gasworks which have now been closed down.

A record quantity of crude tar was distilled at the Board's tar works at Ordnance Wharf, East Greenwich. During the Suez crisis substantial deliveries of coal tar fuels were made by the Board to steel works in South Wales and the Midlands.

A new technique for the surface dressing of roads with tar-coated chippings—known as Metromac—has been evolved by the Board's technicians. It was used successfully on a number of roads during the summer of 1956 and it is considered to be a cheap and efficient way of maintaining trunk roads.

On March 31, there were 19,559 employees in the Board's service, compared with 19,693 the year before. The percentage of time lost through sickness and accidents was 3.88 as against 4.20 the previous year.

Gas Council Aids Drive for Clean Air

NEW COKE APPLIANCE HAND BOOK IS LAUNCHED

'IT is one thing to persuade people to turn from bituminous coal to gas coke, but it is quite another to ensure that the right appliances are installed and the right techniques are employed in burning the fuel.' So said Mr. David Renton, Parliamentary Secretary to the Minister of Power, speaking at the introduction of the Gas Council's new *Coke-burning Appliances Handbook* recently. He went on to congratulate the Gas Council on its initiative and on the careful and helpful way in which the handbook had been compiled; its introduction was timely and would do much to assist local authorities and others in their choice of the most suitable appliances for complying with the Clean Air Act.

At the launching of the Gas Council's new Coke-Burning Appliances Handbook, Sir Harold Smith, Chairman of the Gas Council (Centre) with (Right) Sir Henry Jones, Deputy Chairman, show Mr. David Renton, Parliamentary Secretary, Ministry of Power, and Mr. H. V. Shelton, Chairman, British Ironfounders' Association, one of the latest coke-burning stoves.

First Class Service

Explaining that the policy of the Gas Council was directed towards furthering the aim of the Act by making available to the domestic consumer not only gas but steadily increasing quantities of coke of such a quality as to give first-class service when used in approved appliances, Sir Harold Smith, Chairman of the Gas Council, stressed the fact that the Beaver Committee looked to the gas industry as the main source of supply for the smokeless fuels required to replace coal. There was no doubt that adequate supplies of coke could be produced. Most certainly no sudden shortage of coke would arise as a result of the steady increase in the creation of smoke control areas; indeed, it was the fuel in largest and freest supply for use in such areas.

Of the handbook Sir Harold said that the makers' co-operation had enabled them to give the service capability of each unit. Thus for the first time full ratings were given on each data sheet and in conjunction with the section 'The Selection of Appliances' the whole problem of choosing the right appliance had been simplified.

This innovation was praised by Mr. H. V. Shelton, Chairman of the British Ironfounders' Association, who said he regarded the recent agreement on the uniform method for the assessment of room heating capacities of openable stoves as quite an achievement; these ratings did not necessarily represent the maximum output obtainable from the appliance, but did allow direct comparison of heating capabilities between one stove and another, which would prove beneficial to all concerned.

Concerning the availability of domestic solid fuel-burning appliances, Mr. Shelton had no hesitation in saying that the potential output of the appliance industry was quite adequate to meet any likely demands for smoke control areas, new housing, slum clearance, modernisation and conversion schemes.

The handbook, which has been compiled under the direction of the Coke Technical Committee contains full technical information on about 300 tested and approved coke-burning appliances, together with data on coke-sizing, densities and calorific values. Illustrated with photographs and diagrams, the book is divided into sections for the various types of appliances. Each section is preceded by introductory notes of technical interest and value. Reference is made to the relevant British Standard Specifications and British Standard Codes of Practice. The handbook is available from area gas boards or the Gas Council Coke Department, price 15s.

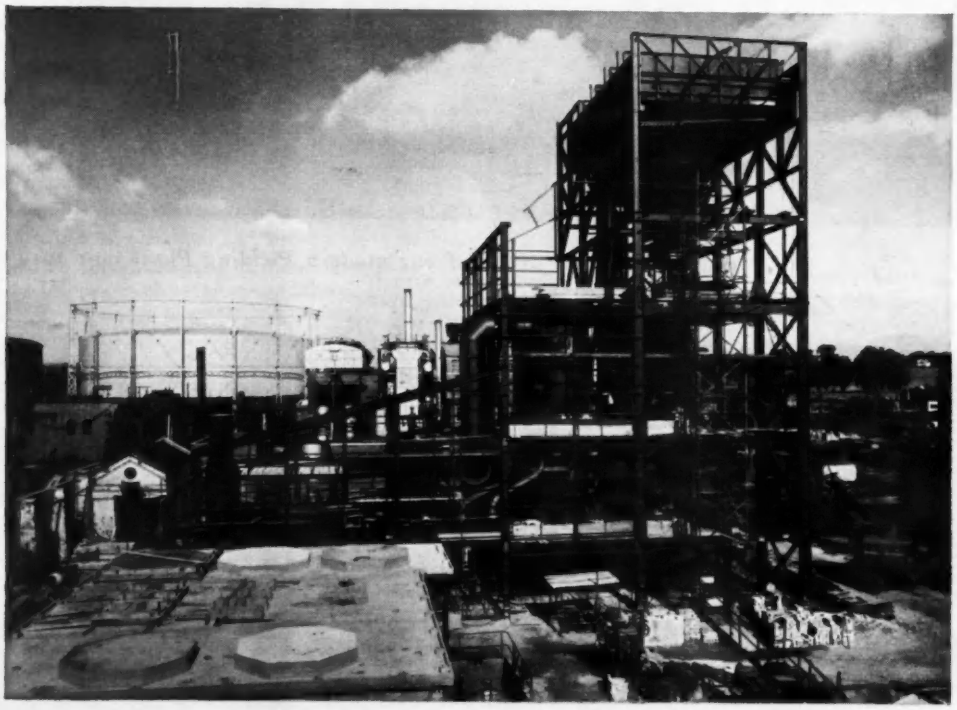
Main Will Be Charged With Electricity

WORK of laying a new trunk gas main between Reading and Oxford started at the end of last month from the Cowley, Oxford, end. The first 4½ miles to Dorchester is expected to be completed by the end of the year. The operation will not reach the Reading area until some time in the New Year. It will cross the Thames at Reading.

Ground surveys have been taken throughout the length of the route to test the extent of corrosion likely to be caused by natural underground electric currents. A Southern Gas Board spokesman said that no abnormal corrosion difficulties were anticipated. The main would be charged with electricity to give it cathodic protection against corrosion.

NOW UNDER CONSTRUCTION

The W-D/I.F.E. Complete Gasification Plant (G.I. System) at the Gloucester Works of the South Western Gas Board. This plant will have a gasmaking capacity of 2½ million cubic feet of 470 B.Th.U. gas per day.



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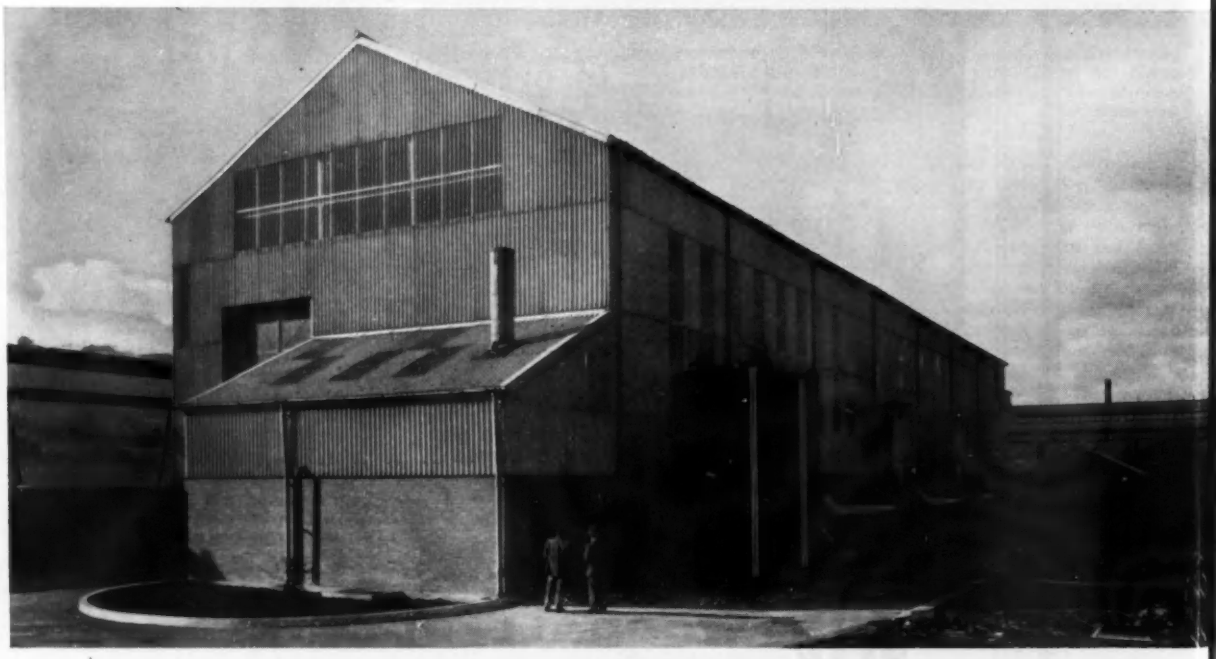

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Presidential Address to the Eastern Junior Gas Association, Lincoln, September 21, 1957.

The Encouragement of Working Economies

By J. L. IRELAND,

LINCOLN, EAST MIDLANDS GAS BOARD.

WE are faced today with problems which make us consider very carefully the economies of accepting industrial loads which are ready to be garnered. We are finding the more ideal domestic load more and more difficult to obtain. In the East Midlands Gas Board area, for instance, the domestic load is less than 40% of the total gas sales, 86.5% of this quantity being estimated as cooking load. We are equally aware that we have only skimmed the surface of space and water heating.

Under extracts from the evidence of the National Coal Board to the Ridley Committee, we read under Choice of Fuel: 'For some purposes—primarily lighting and mechanical power—electricity is uniquely suited and practically irreplaceable; for other purposes—such as space heating, water heating and cooking—it competes with all other fuels and could easily be replaced as it is generally incompatible with the national interest.'

It is estimated, on the basis of very limited data, that the use of electricity for ordinary space heating and cooking accounts for something like 40% of all electricity sales to consumers. If this is correct the country is using about 14 mill. tons of coal, after conversion into electricity, to do heating jobs which could probably be done by 7 mill. tons after conversion into coke or gas.

The gas industry should be apprehensive of its diminishing competitive power and, look which way we will, there is no new gas-making project under investigation which holds any immediate prospect of manufacturing a cheaper therm into holder, other than our brave search for natural gas or the harnessing of pit gases. In this latter field, John Roberts astounds us by stating that more therms are wasted than are made by the whole of the British carbonising industries.

Efficiency Drive

These thoughts bring us back sharply to our present manufacturing processes and our daily efforts to secure working economies. An immense amount of work has been carried out since vesting date to improve our efficiency. During the past few years, while increasing our output by 5% we have reduced our labour force by 4% and we have met a 33% increase in costs with an increase of only 26% in prices.

For a century, the gas industry maintained a thousand or more undertakings supplied from a similar number of collieries. The dictates of economy and the advent of nationalisation have reduced the number of works in operation by over 360, and one has seen mention in the Technical Press of the possibility that the number of gasworks in this country may be further reduced to less than 50. Certain we are that the gas industry is no longer on its own but part of an inter-dependant national fuel industry.

Dr. Marsden has pointed out that 'at present the gas industry produces about 76 therms of gas and coke for every 100 therms of coal consumed,' but 'with complete modernisation, the efficiency target of the gas industry should be 85-90% and *if* this is achieved it will place the gas industry in a strong competitive position.' To my mind we require some revolutionary gas-making process to achieve this high standard of efficiency. Could the use of atomic energy as a heat source for carbonisation be an answer?

Immediately, we can only look to increased efficiencies in utilisation to sustain our sales arguments. Convector gas heaters at 55% efficiency are equivalent to coal heating. The new type heater with 75% efficiency will save on coal heating. As the domestic loads is so important to us we must manufacture a product which appeals to the domestic user and if sulphur removal, even though it costs ½d. per therm, would enable us to present attractive house warming equipment at 100% efficiency, there would be added strength to our arguments.

The Gas Council Commercial Policy Committee received on July 24, 1956, memoranda from an Investigating Committee concerning reduction of the sulphur content of town gas. The memoranda contains many items of real interest and indicate that 1 p.p.m. of sulphur oxides in the combustion products of town gas appears to be the desirable limit recommended by the Royal College of Physicians when gas is burnt fluelessly. The London County Council has insisted on a maximum concentration of 0.5 p.p.m. of sulphur oxide in their schools.

Sulphur Corrosion

We are told that 40% of complaints on water heaters are attributable to sulphur corrosion, but in the cases where these heaters are running on butane/air—virtually free of sulphur—or coke oven gas containing 3-4 grains of sulphur, it is quite usual for water heaters to operate as long as four years without overhaul.

It may be that where large industrial processes not particularly concerned about sulphur content are catered for, sulphur removal need only be practised on domestic consumers' supplies.

The Gas Council in a series of articles as supplements to the *Architects' Journal* have illustrated that:—

(i) the gas/coke method gives approximately twice the heating service for a given ton of coal at the pit head than that supplied by the generation of electricity or by the burning of bituminous coal;
(ii) the gas/coke reduction of coal produces by-products in form of chemicals, drugs, dyestuffs, fertilisers, etc., which are essential to our way of life and some of which cannot be produced by any other method;
(iii) smoke abatement depends in practice on a vastly increased supply of coke.

The Clean Air Act is now law and brings splendid opportunities to sell the smokeless appliances which meet its requirements. This will enforce space heating using only smokeless fuels and if we can keep the prices down, coke and gas provide the ideal fuels for this purpose, although sales restrictions imposed by increased purchase tax (and control of simple hire) seem entirely contrary to the principle of the Clean Air Act.

Mr. R. S. Scorer of the University of London has indicated that the saving to the nation resulting from the universal use of smokeless fuels in domestic grates would be in the region of £100 mill. to £140 mill.

It does appear that the gas industry still has ample scope for using its ingenuity and for proving its resilience. In every field of activity, we are competitive and for every section of our activities the consumer has an alternative. We must see that the consumer is left in no doubt that we can provide the right fuel and the service to meet all requirements. We must be the ambassadors for our industry.

We know that we are working in the national interest; we know that we are providing a service vital to the community; we all have sufficient faith in the fuel products we are selling to use them in our own homes. We must all realise that we have reached the point where high pressure salesmanship is necessary to keep our heads above water and in this salesmanship, we are all—repeat—*all* involved.

At this point in my address I would like to branch out into various functions to indicate how our day-to-day activities can secure working economies which may have a considerable effect upon our revenue and upon the case we present to the consumer.

We normally operate through four distinct channels: (a) Works manufacture, including gas engineering contractors; (b) distribution, including mainlaying contractors; (c) sales and service, including gas appliance manufacturers; and (d) accountancy.

Works Manufacture

While it is true that some of the major gas undertakings were operating efficiently before vesting day, there remained many which were not. The pooling of resources, the opportunities offered for technical training, the refresher courses at all levels, the constant investigations into working results, have all acted as stimulants. There has been a great drive to obtain better operation and to secure better working results with astonishing success in some cases.

Table 1 illustrates some of the working results for the Lincoln works over the past five years and indicates what savings can be achieved by persistent effort and team work. Full use has been made of accumulated experience and suggestions have been welcomed and investigated.

The increased annual revenue obtained from coke and breeze for sale on 100,000 tons of coal carbonised is in the region of £20,000 made possible (a) through savings in producer fuel used and (b) as a result of electrifying prime movers. For a 30% increase in retorts under fire, there has been no increase in fuel to producers. An increase in the works' electricity account of £4,000 per annum has been offset against the coke profits, and also the small drop in therms per ton.

Reorganisation of carbonising operatives has resulted in a saving of seven stokers and two coaling attendants, while the closing down of the sulphate of ammonia plant and the spraying of crude liquor on to the land has turned an annual loss of over £1,000 into a profit. The operation of the Lancashire boilers has become intermittent as wide use has been made of exhaust steam and more attention has been paid to use of waste heat. Each year an attempt has been made to reduce the time that waste heat boilers have been off the line for annual inspection, and consequently reduce the sum of £250 per week required in solid fuel and labour to replace the lost steam.

We have been alive to the great fuel wasters. Steam ejectors using £1,000 worth of fuel per annum have been replaced by small electric pumps carrying out the same duty for approximately a tenth of the cost. Continuous boiler blowdowns have given up their heat to boiler feed waters. Wasteful steam prime movers have become electric drives and the entire fuel position has been revolutionised by the recent introduction of a turbo-alternator of 1,000 kW capacity.

Smaller Items

These larger economies have not diverted our attention from the smaller items which can accumulate to quite considerable wastages. It is pleasing to see that over the past two years investigation has reduced the overall quantities of brushes required from 309 to 265, of stokers' gloves from 204 pairs to 79 pairs, of oxide breaker spare parts to a fraction of previous costs. Table 1 also illustrates the savings which can be obtained from careful use of town water—a saving of £500 per quarter must not be lightly ignored.

The recent rationing of fuel oils brought its own lesson. After rationing commenced how many departments continued to work with equal efficiency but with considerable savings in the use of transport and fuel? The figure for Lincoln works of 8,020 gal. of fuel oil for 1955 became 4,350 gal. for 1956—not all due to rationing admittedly, but certainly to some extent. Almost from the beginning of time, Lincoln works had been served by a Sunday coal and coke train and yet by a small modification to rail sidings, the monthly cost of £80 for this train has been eliminated. Our new friend germanium is paying for a large slice of flue cleaning.

Tests carried out on small sales coke handling indicated that the works were losing as much as 10% weight serving customers with small lots varying from 28 to 112 lb. By a reorganisation, coke losses have been reduced to 3% and labour charges by 35% without reduction in sales.

These examples indicate what can be achieved. We have only listed our successes. There have been failures, but at any rate we have striven and are still striving to secure economies in the day to day operation of the works and the more infectious this economy bug becomes, the

TABLE 1. LINCOLN WORKS
WORKING RESULTS FOR THE FIVE YEARS
ending March 31, 1956

Year ending March 31	Coal carbonised (tons)	Coke & breeze to producers (tons)	Coke & breeze for sale per ton coal carbonised cwt.	Therms per ton	Benzole made (gal.)	Maximum Retorts		Town water accounts over six quarters
						Under fire	Gasmaking	
1951	94,473	16,595	10.33	79.3	23,571	48	46	£1,090
1952	92,950	16,419	10.46	81.4	795	48	46	£934
1953	90,765	16,829	10.53	81.2	38,728	48	48	£878
1954	92,038	15,418	10.76	79.8	58,129	48	48	£903
1955	103,901	16,805	10.89	79.1	80,391	64	51	£720
1956	111,787	16,354	11.22	78.5	80,702	62	57	£540

better chance we shall have of stabilising the cost of Mr. Therm into holder.

The distribution section of our organisation has been very much to the front of our post-war activities, putting tremendous energy into the various grid schemes and running in the region of 14,000 miles of new mains. There is little doubt that local distribution systems have benefited considerably by interlinkage and through the influence of qualified and experienced technicians more readily available in recent years to deal with local problems.

Such activity has naturally produced modern and improved techniques. Mechanical plant for mainlaying has come into its own, showing savings of up to 40% on older manhandling methods. Excavating machines, vibro-rammers, hydraulic thrust boring machines, and hydraulic cranes are quite commonplace and are to be seen on any major scheme.

Scope for the Technician

There is still plenty of scope for the technician in his own undertaking to look around corners and to apply his initiative to secure economies in his day to day techniques. The following list of methods one calls to mind are all worthy of consideration and no doubt many more could be added.

MAINLAYING

(1) The almost complete use of mechanical joints.

(2) Avoid laying at excessive depths wherever possible. Modern spun iron pipes do not need to be laid more than 1 ft. 6 in. to 2 ft. of cover in footpaths and verges and 2 ft. to 2 ft. 6 in. in roads.

(3) Keep excavation for pipes as narrow as possible consistent with sufficient working room. Saves money on initial mainlaying and again on reinstatement charges.

(4) Use of easements wherever possible to save footpath or road work. This also saves following uneconomic routes taken by winding roads, particularly in rural areas.

(5) Importance of careful route surveys to avoid other services (i.e., water, G.P.O., electricity cables, etc.) and natural hazards, i.e., rivers, rock formations, subsidence, running sand, etc.

(6) Adequate supervision and co-operation with other public utilities. Timing of work to coincide with other utilities on housing sites—joint excavations with water and electricity in common trench. Timing mainlaying either before or after builders' materials are stacked on site and in the line of trench.

(7) Mains records are invaluable and can save a great deal of time and money on abortive excavation searching for 'lost' mains.

(8) Trial or pilot holes ahead of excavation to prove a clear route.

(9) Maintaining good equipment and tools. Use of mechanical aids to mainlaying (i.e., excavators, power rammers, compressors, pumps, cutting machines, etc.).

(10) Introduction of bonus schemes.

(11) Organising pipe deliveries direct to site from manufacturers and avoiding the double handling of materials in and out of pipe stores.

(12) Training of mainlayers in modern practice by making free use of training centres. It is important to have this training away from their local surroundings to give them a chance to meet and discuss their jobs with their contemporaries from other areas.

(13) Encourage ideas for the suggestion scheme.

(14) Safety measures and training in the use of fresh air masks, resuscitation apparatus. Men do not like wearing masks and the continued insistence of the use of these masks tends to make the work of 'live' connections move quickly and efficiently and cut down 'unaccounted for.'

SERVICE LAYING

(1) Use of flexible couplings and service connections.

(2) Use of mechanical jointed or leadless split collars.

(3) External wrapping of service pipes and internal coating of red lead paint to retard corrosion.

(4) Trials and experiments with P.V.C. and other non-metallic substances in the manufacture of service tubes. This may well revolutionise the service laying of the future.

(5) Use of thrust-boring machines on cross road services to save excavation and re-instatement.

(6) Provision of pipe ducts in new houses by builders, for service pipe, to save drilling holes in walls and concrete floors.

The industry generally has made every effort to improve upon sales techniques and to provide a real service to the consumer. One has heard it said, however, 'Sales? Yes, the gas Board will put up a wonderful show at selling, but having completed the sale, what about the service?' It may well be that our service does not yet keep pace with our sales and we must make every endeavour to provide a service equal if not better than that of our competitors.

There does appear to be scope for a consumers' maintenance scheme. One buys a vacuum cleaner or an electrically-agitated washing machine and considers it value for money to have them under a half-yearly maintenance contract and yet gas appliances which may lose their appearance and efficiency more quickly are left to their own salvation or to the amateur tinkering of owners. The days have gone when the boards could afford to give this servicing without charge and we can expect some difficulty in 'selling' the maintenance idea to consumers.

The East Midlands Gas Board have covered this in their recent optional two-part tariff where a fixed quarterly standing charge of 26s. per quarter includes an amount for regular inspection and maintenance of all gas appliances in the customer's house. On the other hand, several boards have adopted a free maintenance scheme for apparatus used in public places, i.e., doctors' surgeries and waiting rooms. This class of work can be carried out by less expensive labour groups than fully qualified fitters.

Our showrooms have generally taken on a much brighter appearance and keen display competitions have stirred up considerable enthusiasm among showroom attendants. Schemes such as the bonus payments scheme, the authorised dealers' scheme, and various trading-in schemes have all served to keep sales alive, but our commercial structure needs to be such that high pressure salesmanship is futuristic in outlook.

Consumer Research

Consumer research can play an important rôle, but reliance on written complaints can prove hazardous. It is far better to make full use of skilled interviewing by trained personnel or the reports from home or field tests.

A trend which should really make us sit up and take notice is that presented by the consumers' return to paraffin as a form of heating. A manufacturer producing heaters capable of burning either gas or paraffin has reported that he is turning out 54 oil burning units to one gas unit. The consumer has always considered paraffin a cheap fuel. The oil unit is cheaper to retail, it requires no installation charge, it is 100% portable, and its products of combustion may be more acceptable. Our backroom research establishments must inoculate their efforts with a spirit of urgency if we are to sell without smell.

Additionally in the refrigeration field we are faced with an unfair difference in purchase tax of 15% for paraffin operated refrigerators compared with 60% for the gas operated types.

In spite of the rapid developments in design of gas burning appliances during recent years, the general public still think of a gas cooker as a heated box with sundry burners thrown on top and few realise the uses of gas in

A HANDSOME FREE STANDING CONVECTOR AT A VERY COMPETITIVE PRICE

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PRODUCT OF Radiation Ltd

THE NEW WORLD CONVECTOR 460

The **NEW WORLD** Convector No. 460 is essentially a background heater, particularly suitable for installation in large rooms, halls or shops. Handsome in appearance, the heater lends itself extremely well to two-colour treatment.

The **NEW WORLD** Convector is flueless and may be connected to gas from either side in any convenient position.

The outer casing and front panel are finished in a choice of colours — see below — whilst the expanded metal grille and lighting hole are chromium-plated.

All Gold
Gold outer case with cream front

All Bronze
Nubian outer case with cream front

Height: 26 in. **Width:** 18¼ in. **Depth:** 5⅜ in.
Gas Rating: 7,500 B.Th.U/hr.

the glistening NEW

PARKINSON | RENOWN SIX

has sales appeal PLUS

NEW bright oven fittings, shelves, door quadrants and oven front, now finished in polished chrome.

NEW restyled Parkinson chrome name plate, mounted on the splash plate.

NEW 3D plastic badge in black and silver on the Ajusto knob.

PLUS all the established features that have made the Renown Six such a success.

this bright NEW PARKINSON | RENOWN SIX will be available in November

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THE PARKINSON STOVE CO. LTD., STECHFORD, BIRMINGHAM 33 (A member of the Parkinson & Cowan Group)

industry run well into four figures, providing a fuel with such a degree of control that wastages through spoilt work are rare.

As householders we are well behind the times compared with the Scandinavian countries or with Canada when it comes to comfort in the home, and one would like to see a campaign for house warming installations. Don't let us talk of 'space heating' to domestic consumers—their thoughts immediately turn to the moon, and there is no space in modern houses anyhow. House warming has a much more comforting sound. Schemes for house warming should be comprehensive and include central heating with hot water supplies, the latter continuous load assisting the central heating peak load.

On the installation side of our sales and service organisation the secret of economy must lie with standardisation of fittings. Coaxial arrangements are taking the place of the old-fashioned, cumbersome and expensive 'compo' pipe installations, and as boards insist on work being carried out according to the British Standards Code of Practice, and as fitting personnel are trained to work to these standards, the resulting standardisation is bound to show economies and speed up installation work.

In common with most organisations, however, whatever thought and planning is given to ensuring efficiency, sooner or later the man on the job is involved, and what an effect this man can have upon the consumer for good or evil. Let us not neglect his training in consumer psychology.

While ours is an engineering and technical association we cannot ignore a relatively new method of safeguarding the financial side of our operation—accountancy. This service, if it can provide the right information in good time for corrective measures to be taken, can prove a great boon to the engineer. We must always remember that information costs money, and we should make certain that the information required is worth the cost of obtaining.

No amount of accountancy will compensate for a lack of commercial and money sense. In these times an engineer cannot divorce himself from an interest in, and an appreciation of, the financial aspect of the board's operational activities, and there is no doubt that the student gas engineer should have financial and commercial training included in his curriculum.

The preparation of a revenue forecast does require hard thinking and careful preparation if the forecast is to be accurate. A capital expenditure programme requires similar care. One's personal experience is that the accountant can bring an entirely new outlook and approach to old problems.

We are all aware of the elastic items which so easily get out of hand in our costing systems, 'Maintenance of Buildings and Plant' and 'Residual Sales' being two such headings which can always benefit from further investigation. The insiduous headache 'non-productive time' is always with us and we cannot blame the accountant for his constant reminders of its trend.

One cannot lose sight of the fact, of course, that the main function of the gas industry is still the manufacture and distribution of fuel products to the consumer, and other services are subservient to this main function, assisting in the development of an efficient and economical service.

I would ask the juniors in age in whatever function they are operating to tackle their job with enthusiasm, common sense, and good humour, adopting an attitude which is down to earth rather than high-flying, having ears which are always open to sound advice, but minds which are capable of discarding the chaff, keeping a sense of proportion and showing willingness to accept responsibility. Do the job rather than talk about it, and realise that responsibility can bring opportunity.

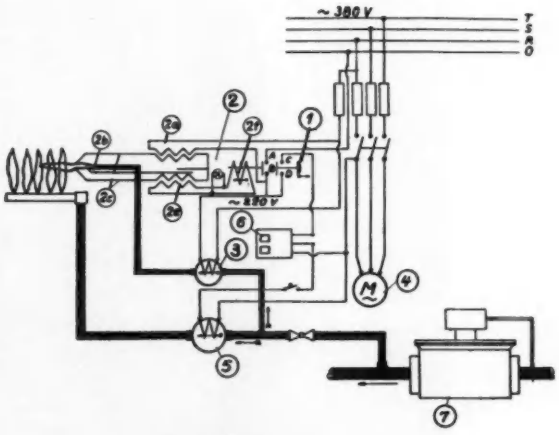
The industry we are working in has over a century of achievement behind it and in recent years has made gigantic strides forward in all spheres. The new and competitive fuels and devices which were in turn supposed to sound the death knell of the gas industry; in effect found it more and more resilient, and I have no doubt in my own mind that this resilience and development will continue.

GAS ON THE CONTINENT

Making use of Blast-Furnace Gas for Space Heating in Industry

THE high nitrogen content and the low calorific value of blast-furnace gas make it unsuitable for industrial furnaces where high temperatures are required. It is, however, eminently suitable for warm-air heating systems for large machine shops, foundries and other large buildings, where a fan blows the air through the gas-heated units into the shops. Efficiencies from 87 to 90% are claimed for this type of heating. Where the fan noise is not objectionable, individual units each containing a fan, a burner and a heat exchanger are installed. A central warm-air system while quieter is normally more expensive to instal. The heating elements in either case consist of heat- and corrosion-resistant special cast iron and possess oval cross section with wide ribs. Conductivity-type flame-failure protection systems, as shown in the illustration, are recommended and these respond to failures of gas, air and electricity supply. A quick-action safety valve has also been included in the fittings because blast furnace gas flames are sensitive to pressure fluctuations as far as back-flash and flame detachment are concerned. It is claimed that the savings of such an installation compared with steam heating are considerable where blast-furnace gas is available in large quantities and at a cheap price.

K. G. Müller. *Gas-Wärme.* Vol. 6. No. 6. June, 1957.



1 *push button*
2a *ignition transformer*
2b *ignition electrodes*
2c *conductivity electrodes*
2e *transformer for* 2f
2f *relay coil*
3 *solenoid valve for pilot burner*
4 *fan motor*
5 *solenoid valve for main burner*
6 *thermostat*
7 *quick-acting safety valve.*

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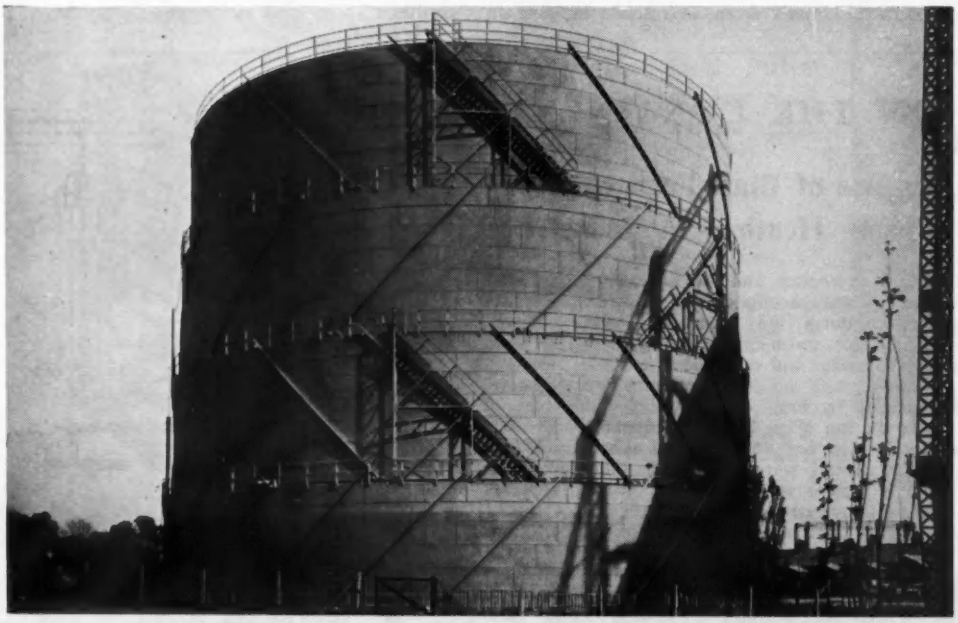

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Classified Advertisements: All small classified advertisements are charged at 2/6 per line (approx. 7 words)—minimum charge 10/–. A Box Number address occupies 2 lines, and a further 6d. is charged towards cost of postage on replies. Copy must be received by first post on Monday to ensure insertion in that week's Journal.

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NORTHERN MANAGER: Philip W. B. King, 11, Tewit Well Road, Harrogate. *Telephone:* Harrogate 69212.

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APPOINTMENTS VACANT

NORTHERN GAS BOARD
DARLINGTON DIVISION
TECHNICAL ASSISTANT (PRODUCTION)

APPLICATIONS are invited from suitably qualified persons for the above vacancy at the Darlington Unit.

Duties of the post include the control of continuous vertical retorts, carburetted water gas, and ancillary plant.

The minimum grading for this post is Provincial 'A' Grade A.P.T. 5 (£605-£685), but the Board reserve the right to place the occupant, either at the time of appointment or later in Grades A.P.T. 6/8 (£640-£825), should his qualifications, experience or performance of the duties of the post merit such higher grading.

Applicants should have completed their National Service. The post is pensionable and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications and experience, together with the names of two referees should be received by Mr. Charles Hindle, Sub-Divisional Manager, Gas Offices, John Street, Darlington, not later than October 19, 1957.

F. WILSON,
Divisional General Manager.

EAST MIDLANDS GAS BOARD
SHEFFIELD & ROTHERHAM DIVISION
DISTRICT DISTRIBUTION ENGINEER, WORKSOP DISTRICT

APPLICATIONS are invited for the position of DISTRIBUTION ENGINEER of the Worksop District, which includes East Retford and Misterton.

Applicants should be Corporate Members of the Institution of Gas Engineers or possess an equivalent technical qualification. They should be experienced in the technical design, practical installation and maintenance of high and low pressure distribution systems and in the control of labour.

The commencing salary will be within Grade A.P.T. 10 (£860/£960) of the National Salary Scales for Gas Staffs and placing thereon will be in accordance with qualifications, experience and ability. A modern 3-bedroomed house is available at Worksop at a reasonable rental on a service occupation agreement.

The post is pensionable and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications and experience, together with the names and addresses of two referees, should be addressed to reach the undersigned not later than Monday, October 21, 1957.

C. C. WOOD,
Divisional General Manager.

Commercial Street,
Sheffield, 1.

October 2, 1957.

EAST MIDLANDS GAS BOARD
SHEFFIELD AND ROTHERHAM DIVISION
DISTRICT MANAGER—ROTHERHAM DISTRICT

APPLICATIONS are invited for the above position which will become vacant during the next few months owing to the retirement of the present Manager.

The position will carry with it responsibility to the Divisional Sales and Service Manager for Sales and Consumer Service in a District with some 55,000 consumers.

The salary will be within Group C (£1,285/1,485) of the National Salaries Tables for Senior Gas Officers, and placing therein will be in accordance with the qualifications and experience of the successful candidate.

The position is pensionable and the successful applicant will be required to pass a medical examination.

Applications, stating age, education, qualifications and experience, together with the names of two referees, should be addressed to the undersigned at the address below, to be received not later October 31, 1957.

A. GWYNNE DAVIES.
Secretary.

East Midlands Gas Board,
Beverley House,
University Road,
Leicester.
October 3, 1957.

EAST MIDLANDS GAS BOARD
SHEFFIELD AND ROTHERHAM DIVISION
ASSISTANT ENGINEERS

APPLICATIONS are invited from suitably qualified persons for the undernoted vacancies in the Sheffield and Rotherham Division:

1. ASSISTANT ENGINEER, CAR HOUSE GAS WORKS, Rotherham, within Grades APT. 10/11 (£860/£1,020).

2. ASSISTANT ENGINEER, CAR HOUSE GAS WORKS, ASSISTANT ENGINEER, DINNINGTON/EFFINGHAM STREET GAS WORKS; both appointments within Grades 7/9 (£705/£895).

The duties of the posts entail responsibility for the operation under the control of the Works Engineer, of large carbonising, C.W.G., Oil Gas and ancillary plant installation.

Candidates should be Corporate Members of the Institution of Gas Engineers or hold an equivalent qualification and should have had experience in the operation of plants of the above types and preferably have had some experience in the control of labour.

Housing accommodation may be available in certain cases.

Candidates should indicate for which of the vacancies they are applying.

The positions are pensionable and the successful applicants will be required to pass a medical examination.

Applications, giving details of age, education and experience, together with the names and addresses of two referees, should be addressed to reach the undersigned not later than Monday, October 21, 1957.

C. C. WOOD,
Divisional General Manager.

Commercial Street,
Sheffield, 1.
October 3, 1957.

SCOTTISH GAS BOARD
EDINBURGH AND SOUTH-EASTERN DIVISION
ASSISTANT SERVICE AND SALES MANAGER

APPLICATIONS are invited from men with organising and administrative ability for the above appointment. Candidates already in the Gas Industry should have considerable experience in service and sales departments and should hold a qualification in either gas supply, salesmanship, accountancy or commerce. Candidates outside the Gas Industry should hold an appropriate sales or commercial qualification and should be able to show past success and experience in selling and sales management.

The successful candidate will be responsible to the Divisional Service and Sales Manager and will be required to assist him in matters connected with the sale of gas and appliances, consumer service, publicity and showrooms in the South-Eastern part of the Division. The salary will be Grade A.P.T. 10, £860-£960 per annum with placing according to qualifications and experience. The appointment is pensionable and the successful candidate will be required to pass a medical examination.

Applications stating age and giving particulars of education, training, qualifications and experience, together with the names of two referees, should be sent to the undersigned within 14 days of the appearance of this advertisement.

DAVID BEAVIS,
General Manager.

15, Calton Hill,
Edinburgh, 1.
September 23, 1957.

SOUTHERN GAS BOARD
ASSISTANT REGIONAL DISTRIBUTION ENGINEER

APPLICATIONS are invited from suitably qualified persons for the post of ASSISTANT REGIONAL DISTRIBUTION ENGINEER in the Oxford Region of the Southern Gas Board covering the districts of Oxford, Banbury and Aylesbury.

Applicants should preferably hold the Higher Grade Certificate in gas supply or equivalent qualification, and must have sound experience of high and low pressure distribution. The successful candidate will be responsible to the Regional Distribution Engineer.

The salary will be within the Senior Staff Scales A to B, £1,075-£1,315, according to experience and qualifications.

The successful candidate will be required to pass a medical examination and, unless already subject to a Pension Scheme by virtue of the Gas (Pension Rights) Regulations, 1950, will be required to join the Board's Staff Pension Scheme.

Applications must be made on a standard form which can be obtained from the Personnel Manager, Southern Gas Board, 164, Above Bar, Southampton, and the completed form should be returned to him not later than Friday, October 18, 1957.

NORTH THAMES GAS BOARD

ASSISTANT ENGINEERS are required in the Board's manufacturing stations.

Candidates, who should be between the ages of 30 and 45, should possess either a University degree, Associate Membership of the Institution of Gas Engineers, or other appropriate professional qualifications.

They should have held for at least five years a responsible position as an Engineer on a gas manufacturing station or a chemical manufacturing plant, or have had experience in work of a similar nature.

Assistance will be given to successful candidates in obtaining suitable accommodation where necessary.

Salaries commensurate with the responsibilities of these important posts will be paid to suitably qualified candidates.

Applications, giving full details, should be sent to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, W.8, within ten days of the publication of this advertisement quoting reference 498/G.J.

COKE OVEN MANAGER.—South Durham Steel & Iron Co., Ltd., invite applications for this post at the Coke Oven, Bye-Product and Benzole Refining Plant at the Middlesbrough Works. Superannuation and house provided with a salary commensurate with experience. Applications marked "Private and Confidential" to General Works Manager, Cargo Fleet Iron Works, Middlesbrough.

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FIRST-CLASS GASFITTER with District Foreman's experience seeks a vacancy. Preference Southern England. Address: No. 333, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

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AGENCIES sought by firm of long experience and close connections with Coking Plants, Tar Distilleries, Refineries, with other connections throughout Great Britain, to handle Plant, Chemicals, etc. Capable of Technical advising on Plant, Processes and Procedure. Apply: No. 332, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

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SPECIAL OFFER: Large quantity of new cast iron fullway valves, all iron parts, 8 in., 10 in., 12 in. and 14 in. for sale. The Midland Iron & Hardware Co. (Cradley Heath) Ltd., Cradley Heath, Staffs. Tel.: Cradley Heath 6264 and 5.

PRESSURE Vessels. 32' × 8' 6" dia. and 30' × 8' 6" dia. for 100 lbs. and 120 lbs. W.P. Insurance reports. Cleckheaton Engineering Co., Ltd., Cleckheaton, Yorks.

STEAM, water and gas valves. Most types and sizes. ½" to 48". Cleckheaton Engineering Co., Ltd., Cleckheaton, Yorks.

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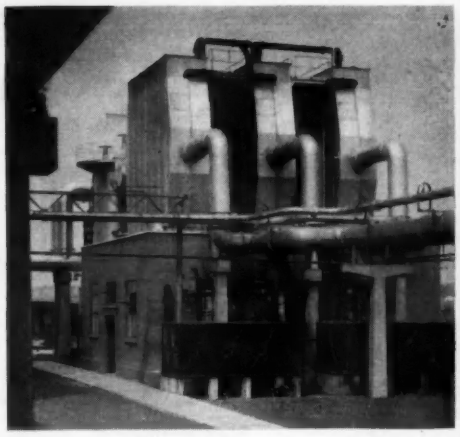

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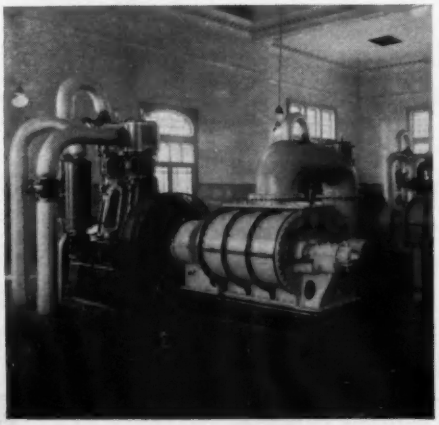

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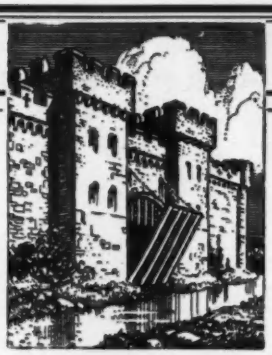

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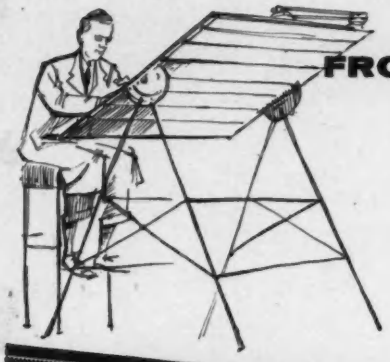

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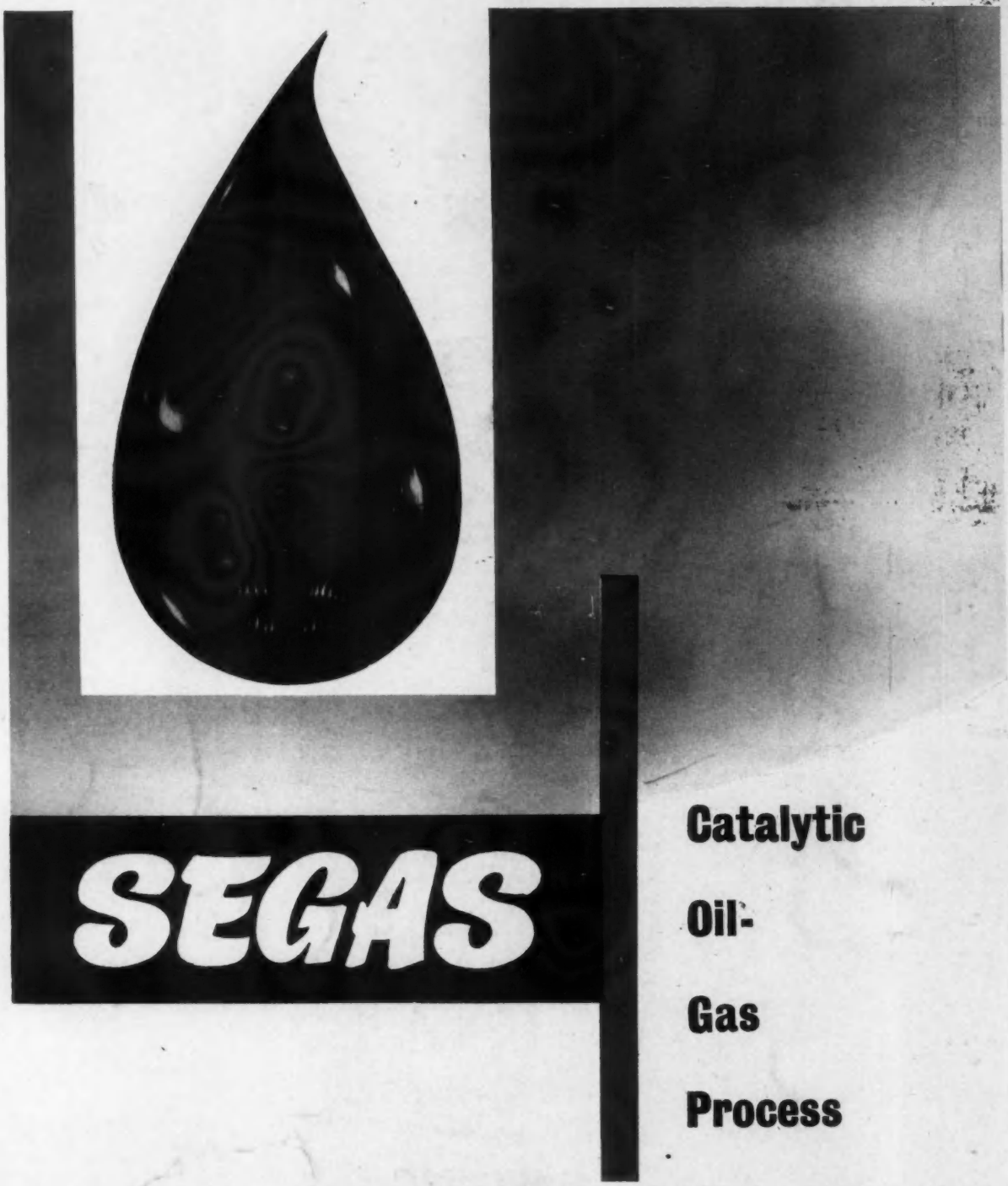

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